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ABSTRACT

This monograph attempts to integrate experience and research findings in several related disciplines and bring them to bear on the problem of how to make language programs in schools simultaneously accommodate the needs of both the language curriculum and the general curriculum. It addresses four issues: (1) how specific languages, in all their varieties, are typically used to convey general information through various spoken and written channels to children in schools, and how they are susceptible to change; (2) how students' language proficiency, as individuals and as groups, affect acquisition of other knowledge and skills, and vice versa, in a typical school; (3) options available to language specialists in relating the monolingual, bilingual, or multilingual curriculum to language syllabi, tests, and instructional sequences in language courses; and (4) in cases where choice of language media and language subjects has not ben dictated by educational policy, or is otherwise subject to change, what the most important considerations are in determining the kind of language to be used for each type and level of instruction, in both language and general curriculum. (MSE)

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Richard B. Noss

LANGUAGE IN SCHOOLS

Edited by

Andrew Gonzalez, FSC
Bonifacio P. Sibayan

Manila
Linguistic Society of the Philippines

Monograph Series No. 41

FOREWORD

Richard (Dick) B. Noss was born on September 23, 1923 in Sendai, Japan, the son of missionary parents. He grew up and was educated in the Eastern United States: B.A. cum laude, English, 1943, Catawba College, Salisbury, North Carolina; Ph.D., Linguistics, 1954, Yale University. After receiving his B.A. degree he spent three years in the U.S. Army Signal Corps as Japanese translator. He was an instructor (Russian language) at Yale University for three years (1952-55).

Noss worked ten years as a linguistic scientist in the Foreign Service Institute, Department of State, Washington, D.C., four years in the Department of Far Eastern Languages (1955-59), and six year (1961-67) in the Department of East Asian Languages, where he was head in 1966-67.

As a linguistic scholar in East Asian languages, especially in the Thai language, he spent twenty-one years of his professional life as a linguist and language planner in Southeast Asia, as consultant and adviser and in teaching and/or research and writing in the following countries: Thailand, Singapore, Malaysia, Cambodia (Kampuchea, Khmer Republic), Indonesia, Philippines, Laos, Vietnam, India, Japan and Burma.

Noss was consultant to the Ford Foundation on Language Issues in Southeast Asia Project and other projects. In the summer of 1975, he taught sociolinguistics and language planning at the Ford Foundation-sponsored Linguistic Institute held at the Philippine Normal College, Manila.

Noss had a number of what he called 'non-teaching experiences', which actually were major contributions to the area of language planning and teaching. He helped develop the first version of the Foreign Service Language Proficiency Test (oral interview) which is now recognized as a major innovation in language testing. He helped establish a number of institutions and practices in Southeast Asia such as the first national English Language

Center in Thailand, which became the model for what is now the Chulalongkorn University Language Institute; in Malaysia the country's first Language Unit, now absorbed into the Curriculum Development Centre; and it was upon his recommendation that language planning was the theme of the Regional Language Centre, Singapore (for the years 1982-86) and as a required academic course for students of applied linguistics.

It was while he was a Specialist in Applied Linguistics and Language Planning and Chairman, Research and Development Committee, at the Southeast Asian Ministers Education Organization (SEAMEO) Regional Language Centre, Singapore, where he spent six years (1978-84), that Filipino teachers and students in English language teaching came in contact with Noss and his wife Elaine.

He wrote a number of books, monographs, articles and reviews on English, Asian languages, theoretical and applied linguistics and language planning. The last to be published before he left Singapore to live in Washington, D.C. in 1984 was *An Overview of Language Issues in Southeast Asia 1950-1980* (with Andrew Gonżalez, FSC, Amran Halim and Angkab Palakornkul), Singapore: Oxford University Press, 1984. He was busy working on *Languages for the Modern World* which appears to be a revised version of an earlier manuscript *Language in Schools* when he died of cancer on February 18, 1989.

After Noss passed away, his friends all over the world wanted to publish a memorial volume to honor him posthumously. Instead of a memorial Festschrift, we offered to edit and publish his last work, a work he had finalized at the time of his death. The work is especially suitable to be a final work as it summarizes his insights and experiences after a lifetime of work with language in the schools. His widow Elaine has kindly consented to having this volume published and provided us with the photograph and the list of his publications as well as the two versions of the work.

The volume is being offered as part of the monograph series (number 41) of the Linguistic Society of the Philippines and copies are available upon request at the

Linguistic Society of the Philippines office at De La Salle University, 2401 Taft Avenue, Manila, Philippines.

We hope that this volume will be read by all students of language and education to profit from the insights of a first-rate mind gifted with an ability in languages, both learning them and teaching them, with realistic common sense and uncommon insight, which was the spirit he brought to all his work in the field of language teaching and the sociology of language.

Manila, Philippines October 1996	Andrew Gonzalez, FSC and Bonifacio P. Sibayan

LIST OF PUBLICATIONS OF RICHARD B. NOSS

1964	Thai reference grammar. Washington: Foreign Service Institute.
1966	(with Im Proum)). Cambodian basic course 1. Washington: FSI
1966	The treatment of */r/ in two modern Khmer dialects. Studies in Comparative Austroasiatic Linguistics, Norman H. Zide, ed. The Hague: Mouton.
1967	Language policy. Higher Education in Southeast Asia 3.2. Howard Hayden, ed. Paris: UNESCO/IAU.
1968	Review of Mary R. Haas, Thia-English students dictionary. Tokyo: Orient West.
1970	Paired adjectives in Cambodian. Journal of the Siam Society 58.1.
1971	Language and politics in Southeast Asia. Languages Sciences 16.
1971	Review of Anthony et al, Foundations of Thai. JSS 68.1.
1972	(with David E. Eskey). English nominalizations: Writing drills. Bangkok: Longman/Thai Wattana Panich.
1972	The ungrounded transformer. Language Sciences 23.
1972	The verb "have": American and British usage. English Teaching Forum, 10.6.

1972	English causative constructions: what can a small sample of informants tell us? Bulletin of the English Language Center 11.2.
1972	Rhythm in Thai. Tai Phonetics and Phonology, Harris and Noss, eds. Bangkok: CIEL.
1973	Contextual and background clues in communication. Bulletin of the English Language Center 3.1.
1974	Review of W.E. Rutherford, Modern English: A Textbook for Foreign Students. PASAA 4.1. (Bangkok).
1975	How useful are citation forms in the synchronic analysis of Thai phonology? Studies in Tai Linguistics in Honor of William J. Gedney, Harris and Chamberlain, eds. Bangkok: CIEL.
1976	(with Theodore S. Rodgers). Does English for special purposes imply a new kind of language syllabus? Curriculum Development and Syllabus Design for English Teaching, RELC Anthology Series 3. Geoffrey H. Wilson, ed. Singapore: Singapore University Press.
1979	Some Southeast Asian priorities in applied linguistics. Applications of Linguistics to Language Teaching, RELC Anthology Series 6. Jack C. Richards, ed. Singapore: Singapore University Press.
1979	Mistakes, mismatches, and gaps. RELC Journal 10.1.
1979	Papers on variation in English. RELC Occasional Paper Series no. 9.

1980 Teaching vocabulary through cloze dialogues. Guidelines 3. Singapore: RELC.

1980 The semantic quad hypothesis. Forum Linguisticum, 5.1. Lake Bluff, Illinois.

1981 The problem of word counts in language undergoing standardization. Papers of the Fourth ASANAL Conference, by Asmah Haji Omar, ed. Kuala Lumpur: University of Malaya Press.

1981 Listening, hearing and reading. RELC Journal 12.1.

1982 Editor. Ten papers on translation. RELC Occasional Papers Series no. 21.

1983 Comments on J.B. Pride, Stylistic variation in the repertoire of the bilingual/multilingual speaker. RELC Journal 14.1.

1983 Lexis acquired with insufficient syntactic information: a special case of transfer. Papers on Translation: Aspects, Concepts, Implications, RELC Occasional Papers Series 28, Franz Eppert, ed.

1983 Editor. Language teaching issues in multilingual societies in Southeast Asia. RELC Anthology Series no.10.

1983 Editor. Varieties of English in Southeast Asia. RELC Anthology Series no. 11.

1983 (with Andrew Gonzalez, Amran Halim, and Angkab Palokornkul). An overview of language issues in Southeast Asia: 1950-1980. Kuala Lumpur: Oxford University Press.

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Introduction

Language in Schools is an attempt to integrate the accumulation of experience and research findings in several different disciplinary fields, and to bring them to bear on a central problem of educational institutions and systems throughout the world: namely, the problem of how to make language programs in schools simultaneously accommodate the needs of both language curriculum and general curriculum. The varieties of speech and writing that occur in language subjects, whether these subjects are required, elective, or optional, do not always match the varieties of speech and writing that occur as media of instruction or as resource languages in general education. This fairly typical mismatching of school language varieties is often further compounded when some or all of the varieties concerned are not used in the homes of students or in the community where the school is located.

Regardless of the background and language-use patterns of the school population, the mismatch between the language of instruction and the language to be learned may be *total*, in the sense that obviously different language varieties are chosen for emphasis in language and general curriculum. Or the mismatch may be only *partial*, as in the case where different forms, functions, and channels of what is ostensibly the 'same' language are emphasized in language courses as opposed to the more general subjects. Thus the basic problem addressed here occurs not only in bilingual and multilingual education, but also potentially in the most 'monolingual' of schools and school systems.

This is not a book about second or foreign language teaching, or about bilingual education, or about language arts courses for native speakers. It does not purport to tell the reader (in any specific way, at least) why Ali can't read. The material presented here, however, does touch upon all of these from the point of view of the applied linguist, the language teacher, and the curriculum developer. Although every one of the topics of this book has received considerable attention, separately, from linguists, psychologists, sociologists, reading specialists and general educationists in recent years, the emphasis here is on a synthesis of their findings and recommendations. This synthesis can then be applied to the educational issues as defined in the language specialist's frame of reference. The central questions which the book attempts to answer are the following:

1) How are specific languages, in all their varieties, typically used to convey general information through various spoken and written channels to students in schools, and how susceptible to change are these specific varieties, channels, and uses?
2) How does the language proficiency of the students, as individuals and as groups, affect the acquisition of other knowledge and skills, and vice versa, in the typical school?
3) What are some of the options available to language specialists (acting as implementers or engineers rather than planners) in relating the monolingual, bilingual, or multilingual curriculum to language syllabuses, language tests, and actual instructional sequences in language courses?
4) In cases where the choice of language media and language subjects has not been dictated by educational policy, or is otherwise subject to change, what are the most important considerations in determining the kind of language to be used for each type and level of instruction, in both language curriculum and general curriculum?

The first four chapters of the book define its central topics, and are addressed mainly to the first question above. The unifying theme of these topics is the linguistic aspects of the medium of instruction in schools. The remaining chapters comment on these topics with a view to answering the other three questions in rather specific terms. The topics of the book, and the comments on them, are not based on a single model of an educational system, or on a single geographical area of the world. They are meant to apply, universally and globally, to every form of instruction (including self-instruction in an institutional context) in which languages are the principal medium or subject matter of the instruction. Inevitably, some of the observations will touch upon problems in the teaching and learning of languages as such, and some will touch upon problems encountered only in true bilingual education, but neither of these sets of problems is the central focus of the argument.

Examples are drawn from institutional types and geographical areas with which the author is most familiar. The extent to which the examples are truly representative is a judgment which can only be made by readers in the light of their own collective experience. The applications of linguistics to language education and language planning are well known. This book is an attempt to extend these applications to general education itself -- an area which has already received beneficial inputs from many disciplines, but so far relatively few from applied linguistics.

Richard B. Noss

CHAPTER I

THE CHANNELS OF INSTRUCTION

1.1 Some definitions
1.2. Oral channels
1.3. Written channels
1.4. Non-verbal channels
1.5. The concept of text
1.6. Self-instructional channels
1.7. Testing channels
1.8. The school curriculum

The subject of this book, *Language in Schools*, might mean many things to different people, depending on the definitions of the two principal terms in the title. In order to avoid as much misunderstanding as possible, the two key terms along with the terms most closely associated with them are defined in this first chapter. These definitions in turn become the principal areas of reference in the discussion which follows, and each of the remaining chapters is devoted to some aspect of the relation between the two key terms.

1.1. Some definitions

Schools is a cover term for institutions which have been established primarily to give organized instruction to groups of learners, from the kindergarten level to university postgraduate and professional studies. Schools, whether or not they have buildings of their own, are presumed to be institutions in the legal and financial sense as well as in the social sense. That is, they have their own charters, constitutions, and other bodies of rules which govern their operation, and they are subject to local laws which apply to such institutions. The educational program content of schools may also be subject to scrutiny or control at a higher level; in such cases they form part of a *school system*. Whether financed by governments, private organizations, or individual contributors, schools have budgets and are subject to financial constraints of one kind or another.

The purpose of schools need not be confined to the provision of formal education, however. Many schools have other functions in the communities where they are located, besides organizing and administering instruction. Schools may function as libraries, as meeting places for social and political groups, as recreational facilities, as adult and non-formal education centers, as headquarters for religious groups, or even as medical or counselling clinics. Schools that belong to governments often serve as facilities or sites for non-educational activities of the government: military or judicial functions, social services, and elections, for example. High-level institutions, such as universities which have research and private or public development functions, are still considered schools as long as their primary purpose is to provide organized instruction to groups of learners, and so on.

Insofar as the students undergoing actual programs of instruction in schools are concerned, the purpose of schools is also not entirely educational in the strictest sense. In almost all societies and nations, schools serve at least three other important purposes besides providing the means for students to learn new information and skills, as follows:

1) Schools relieve parents of the duty of supervising children for at least part of the day, and they may also look after the children's physical well-being during that time;
2) Schools foster correct attitudes and behavior in young adults;
3) Schools keep people off the employent market until they have reached a suitable age.

In general, these non-educational purposes of schools are distributed according to the age of the students concerned; the first applies particularly to the younger students; the second to all students, but particularly to those in the middle age-group; and the third to the older students. The first and third purposes tend to be more prevalent in economically developed societies, and the second in less developed ones, but the correlation is probably not overwhelmingly significant.

It would be tempting to ignore these other purposes of schools in considering the various aspects of language in formal education, and to concentrate instead on the academic-learning part of education, as is so often done in similar studies of the educational process. It would also be tempting to include the whole community in which the school is located as a frame of reference for the discussion, but that inclusion would involve macro-sociolinguistic considerations far beyond the scope of the present work. Consequently, we can do no better than to restate the original definition:

> *Schools* is a cover term for institutions which have been established primarily to give instruction to groups of learners, etc.

-- with the understanding that the 'instruction' may be in what to think, how to dress, how to behave properly and make friends, how to bake a cake or fix a car, how to exercise, or simply how to play quietly and not disturb adults, in addition to instruction in the traditional academic subjects.

Organized instruction, of course, also occurs *outside* of schools -- for example, in on-the-job training and in other such programs sponsored by various organizations for their own employees or members -- but unless the sponsoring legal entity has been established for that express purpose it is not a school, according to the definition given above. Military organizations, for example, often operate schools (usually labelled as such), but much actual military training may take place elsewhere, being organized in connection with unit maneuvers.

The other key term of the title is *language*. A preliminary definition of this term is as follows: *Language* is a cover term for conventional systems of audible symbols through which human beings interact, and for conventional systems of visible symbols which are ultimately based on these audible symbols -- that is, a cover term for all sorts of spoken and written languages in general. (Note that this is not intended as a definition of *a language*. The concepts of 'a language' and 'a dialect' are much more complicated ones, to be discussed at some length in Chapters 2 and 3).

In the school context, language has three important, and often quite separate, functions:

1) as a *medium of instruction;*
2) as a *subject of instruction;*
3) as a *medium of communication* among school populations (students, teachers, and administrators) outside the context of formal instruction.

We will be concerned here with language in all three of these functions, or at least with the *linguistic aspects* of these functions. All of them, in fact, have non-linguistic as well as linguistic aspects. The media of both instruction and communication outside the classroom, for example, obviously include non-verbal channels, and even subjects with language labels can include a great deal of non-linguistic content as well as using non-verbal channels to assist the instruction. It will therefore be necessary to define the terms *medium*, *channel*, and *linguistic aspects* before proceeding further.

The *medium of instruction* refers to a *particular variety* of written and/or spoken language used in any instructional sequence in the school. The medium of instruction is consumed (heard, seen, or read) by students in schools. It is produced (spoken, broadcast, projected, written, or printed) not only by teachers, but also by other students and by the developers of teaching and learning materials which are provided by the school itself. (Materials in the same language medium provided by the parents or by the community at large are beyond the scope of this study.) The category of teaching and learning materials includes graphic and print media, blackboard and wall displays, labelled exhibits and equipment, and all the software of the school's audio-visual equipment plus such radio and television broadcasts as are received directly by the school or form part of its curriculum. In modern schools with generous budgets, the category may even include certain kinds of computer programs and software having language medium aspects.

As we shall see later, the classification and identification of the particular variety of language used in a given instructional sequence is not as simple as it looks (or sounds). It is not sufficient to adopt the label of the medium of instruction that is *prescribed* for that sequence by the school authority – for example, 'English', 'Chinese', 'Swahili', etc. We must also consider the variety of language *actually* being used in the instruction, and sometimes this is very difficult to do with any precision. As a result, our discussion of language varieties will have to be confined to typical instructional sequences, or case studies, and cannot be expanded to cover every possible contingency in schools around the world. At the same time, an effort will be made to consider actual, rather than hypothetical, media of instruction, and to classify them in terms of a theoretical framework which discriminates varieties of language in a systematic way (see Chapter 3).

The term *linguistic aspects* is used in a more or less technical sense, but in a sense that is broad enough to encompass what most people would understand by 'linguistic'. Aspects of the media of instruction and communication in schools which are treated in this book are of the following two general types:

> a) Those aspects of organized instruction or intra-school communication which directly involve *any* variety of language, written or spoken, and
>
> b) The psychological and sociological aspects of organized instruction and communication which have to be taken into account in order to explain the role of language in each type of learning process and the role of the school in language acquisition without formal instruction in the language variety concerned.

In other words, whereas the various media of instruction themselves have to be treated on a *microlinguistic* basis (in order to identify them properly), their uses in the school context also must be considered from what might be called a *macrolinguistic* point of view.

Before exploring this distinction more specifically, it would be well to summarize the definitions which have been given up to this point, as follows:

> *Language in schools* refers to the linguistic, psycholinguistic and sociolinguistic aspects of particular varieties and sociolinguistic aspects of particular varieties of spoken and written language which are used in instructional sequences, taught as subjects, or used for informal communication in institutions which have as their main purpose the provision of organized instruction to groups of learners.

One additional definition is needed to introduce the main topics of this book, in order to cover the generalized uses of language in schools, and clarify the distinction between *media* and *channels* of instruction. The *channels of instruction* (and communication) are the generalized uses of spoken and written language, without regard for the particular variety or classification of the language so used, and the parallel uses of non-verbal cues for instruction and communication purposes. The distinction between media and channels must be constantly kept in mind, because both involve spoken and written language.

1.2. Oral channels

Some of the most common channels of instruction and communication in schools are obviously various uses of spoken language. At the beginning stages of education (or at the levels usually called primary and pre-primary) the oral channels are typically dominant, but become less dominant as the student progresses to higher levels (toward secondary, vocational, technical, and higher education). But even at the highest levels (postgraduate and professional) the oral channels are still prevalent, especially in group as opposed to individualized instructional sequences.

Although we are primarily concerned here with oral channels rather than oral media, certain observations about oral media of instruction are pertinent here. The main point is one that has not always been taken into consideration by educators, probably because of traditional ways of looking at language which have been encouraged by many schools and school systems. This not-so-obvious point is that variation in the oral media is, in the typical school situation, apt to be much greater than variation in the written media. This is just as true of 'monolingual' education as it is of 'bilingual' education, or even of multilingual education. The reason, of course, is that written media allow less flexibility in the form and style of language -- both because of the frozen nature of graphic systems as vehicles of language and because of the planned nature of most written texts. Except for oral instructional materials pre-recorded on tapes or discs, spontaneous adjustment of spoken language styles to suit a particular audience is always possible, and where immediate feedback from the audience is also a factor, the variation in oral media tends to be the greatest (for example, in classroom interaction between teacher and students as opposed to a formal lecture or informal presentation by the same teacher).

Variation (microlinguistic) in the oral language of teachers, however, is only one kind of variation in the oral media. Instructional sequences may include oral-language production from the following types of sources:

a) by teachers of language courses;
b) by teachers of non-language subjects;
c) by lectures, speakers, or resource persons brought in from outside the school (or visited by students under school auspices);
d) by teaching assistants, lab assistants, and older students;
e) by other students in the same class (in peer-teaching or organized group activities);
f) by voices on public address systems in the school;
g) by voices on live radio and television programs received by school equipment;
h) by recorded voices on tapes, discs, or pre-recorded radio and television programs and film soundtracks, etc.

Note that types a)-f) above require the physical presence of the oral channel producer in the school or at the school-organized activity, and that most of the spoken language heard in instructional sequences is accounted for by these types, and especially by type b). Whether or not the oral production is in the 'same' language or in clearly different languages, the range of variation in the oral media, from the channel point of view, is thus quite broad in the typical school.

The sources of oral channel production in connection with instructional sequences, as exemplified by the above list, may all have certain common characteristics (those of a particular phonological system), but they also exhibit variables which serve to distinguish the oral channels and their uses. The main variables relevant to the oral channels are the following:

1) *Message rate and recoverability:* Can the listener control or influence the rate of oral delivery, as he can in some kinds of electronically recorded speech and in some classroom situations, or is he obliged to accept the message at whatever speed it is delivered? Can the listener play back, skip forward, ask for repetition, or otherwise recover certain parts of the message at will, or is he confined to a one-time listening task?
2) *Channel noise, volume, and purity:* Is there interference in the oral channel, such as electronic or natural background noise, or is the message being clearly received? Are the volume and pitch of the oral message at satisfactory, constant levels? Are there speaker-produced gaps, errors, self-corrections, or non-linguistic sounds, or is the message 'clean' in this other sense?
3) *Message consumer variables:* What is the listener expected to contribute to the message, in terms of his linguistic and communicative competence, familiarity with context, cognitive skills, inferencing ability, attention, perception, and short-term memory?
4) *Comprehension task variables:* What is the listener expected to do with his version of the message as received? Is he to accept it as it stands, ask for clarification, question it, comment on it, act upon it, or provide other kinds of feedback? Must he store the entire message, select salient parts of it for storage, or concentrate on certain details, or is he free to treat the whole message as optional background information, and so forth?

All of these oral channel variables are to be considered further in subsequent chapters (e.g. in Sections 7.1., 8.1., and 8.4.). The purpose in introducing them here is to underscore the point that spoken language is produced (and consumed) through many different kinds of oral channels, with different variables attached to them, in the instructional and other communicational contexts of the school, and that variation is possible quite independently of language medium variation.

1.3. Written channels

As mentioned in the previous section, written media tend to be overshadowed by oral media in the early stages of education, and become dominant only much later in the educational process. One reason for this has to do with the typical *language learning* sequence: Whether the early medium of instruction is a familiar language or a language new to the child, the number of children who can understand spoken varieties of it usually exceeds the number who can interpret written varieties of it. Another reason is that the beginning stages of any instructional sequence typically require more interaction between teacher and pupils than the later stages do, and such interaction is usually more quickly and satisfactorily accomplished through the oral channels than through the written ones.

The dominance of the written media at the higher levels of education (and the tendency to regard oral media as necessary but transitional means of instruction) can easily be attributed to non-linguistic factors. In both monolingual and bilingual education, most of the available oral media require the physical presence of the media producer; the reverse is true of the written media (see below). When a student has progressed beyond the elementary stages of instruction in any subject, he becomes a candidate for individualized treatment and, eventually, for greater specialization in the subject. Even in a learning sequence which all students are required to follow, without differentiation, there is no good reason to restrict the students to the time constraints and professional limitations of the teaching staff who are physically present in the school at the time of instruction.

When teaching and learning materials are easily available in an appropriate written medium (or media), therefore, it becomes educationally more attractive for schools to gear their training efforts toward acquisition or reading skills in the relevant language(s), rather than to spend their resources on additional teachers whose physical presence is required in order for them to teach. This is where the linguistic considerations become so important. It explains why many schools, even 'monolingual' ones, employ oral and written media which are scarcely related to each other. In the extreme form of this educational strategy, the principal function of the oral media becomes explanation by teachers to students of material which has already been presented via the written media but which has not yet been fully understood.

Instructional sequences, from the channel point of view, may include written products of the following types:

a) texts handwritten on blackboards;
b) texts assembled or revealed on slot-boards, felt-boards, roll-boards and various other display devices;
c) texts projected on screens (by a teacher, outside lecturer, or another student);
d) notes or memos written to individual students (usually handwritten);
e) comments on, or corrections of, individually assigned work;
f) labels or descriptions of natural objects and artifacts in the school;
g) semi-permanent displays on walls or boards, with verbal components (e.g. charts, maps, pictures with captions);
h) printed or reduplicated materials issued to every student (textbooks, handouts, workbooks, etc.);
i) printed materials available in the classroom;
j) printed materials available in the school library or resource center;
k) the written language component of television broadcasts, videotapes, films, film-strips, etc.;
l) texts accessible to students via other electronic means (microfilm, microfiche, computer-controlled displays, etc.).

Note that only types a)-e) above require the physical presence of the written media producer, and that types h)-j) still account for the vast majority of written material available in schools around the world today. The written products listed above may, of course, be in more than one language medium in the same school or school system.

Variation in a given language's written versions, for reasons pointed out in the previous section, tends to be less than in the corresponding oral versions. But for some languages, systemic variation of the written symbols themselves may be considerable. Malay, for example, is written in both Roman and Jawi (Arabic-derived) scripts. Written Japanese demands recognition of Chinese characters and two different syllabaries -- the three graphic systems are only partly interchangeable. Even English requires students to be familiar with handwritten, handprinted, typewritten, and machine-printed versions of the same alphabetic symbols, all of which can be in upper case or lower case, and so on.

The sources of written channel production in connection with instructional sequences, like those of oral channel production, have certain common characteristics (those of a particular writing system) but also exhibit other types of variables. The written channel variables, in fact, correspond very closely with the oral channel variables of the preceding section, for example:

1) *Message rate and recoverability:* Is the written text progressively displayed a single time, at a speed not controlled by the reader (as in a rolling projection, film subtitles, etc.) or is the reader able to go forward and backwards in the text at will and read or re-read at his own pace?

2) *Channel legibility, brilliance, and purity:* Is there interference in the written channel, caused by poor writing surfaces or instruments, uneven screens or display surfaces, or is the message coming through clearly in this respect? Is the light on the writing, or the writing itself, of sufficient and constant brilliance, intensity, and contrast, or is the light too bright, too dim, or flickering? Are there misprints, illegible or non-linguistic marks, gaps, or self-corrections in the message, or is the message 'clean' in this respect?

3) *Message consumer variables:* roughly the same as for the oral channels (see previous section).
4) *Comprehension task variables:* the same as for the oral channels, except that the typical written message affords less opportunity for clarification and feedback.

Like the oral channel variables, these generalized variables in the written channel pertain regardless of the particular language medium of instruction or intraschool communication.

1.4. Non-verbal channels

The definition of 'medium of instruction' given in Section 1.1. restricts this term to particular varieties of written and spoken language used in instructional sequences. It will be necessary, however, to consider the non-verbal media of instruction briefly as well, because these media are so often used in conjunction with the verbal media, both in instruction and in ordinary communication. Not only that, some of the non-verbal media may be affected by cultural and social biases in much the same way that linguistic messages are obviously affected when they are conveyed through different oral and written media. This is why the non-verbal aspects of instruction and communication are not merely channels but also media in their own right.

The channels used to convey non-verbal media correspond to the five human senses: hearing, sight, taste, smell, and touch. The first two channels, of course, are shared with the oral and written media respectively (and tactile channels, in the case of Braille, coincide with writing). Although the last three channels also have some importance in instructional sequences, it is the visual channel which conveys most non-verbal media in the typical school, and it will therefore be more useful to consider non-verbal instruction and communication in terms of media rather than channel types.

The four generalized types of non-verbal media to be considered are a) teachers' body language, b) visual displays, c) natural objects, and d) artifacts and equipment. These media are commonly used in instructional sequences all over the world, regardless of the particular social and cultural interpretations they may reflect in different schools and school systems.

Teachers' body language refers to the non-verbal behavior of those in charge of instruction in the school. It covers everything from the demonstration of a jumping technique by a physical education or dance instructor to a history teacher's frown or a science teacher's gesture. The classification and interpretation of kinesics and proxemics, including 'body language' proper, facial expressions, gestures, and distances between participants in a communication event is of course a discipline in itself, and the subject has already been ruled out by our definition of language (there being no conventional audible symbols in the kinesic and proxemic systems). The point to be made here is that although the non-verbal behavior of teachers is almost totally culture-determined, teachers tend to be less aware of this aspect of their media and channels of instruction than they are of the cultural and social implications of the linguistic media and channels which they overtly employ.

Unlabelled *visual displays*, and especially pictures, photographs, drawings, diagrams, and three-dimensional models, are perhaps the next most common form of non-verbal media in schools. To the extent that visual displays represent abstractions, situations, or events rather than static objects and spatial relationships, they are subject to interpretation in the same way that linguistic and kinesic messages are. Sketches of human facial expressions, clothing, and bodily postures, depictions of rural and urban scenes or natural phenomena, and even the abstract use of colors as a coding or mnemonic device mean different things to different observers, depending on their personal experience of the world. When filtered through *another* person's perspective, as they are in the typical visual display, these sketches, depictions, and colors become even more different. This point is raised here because it becomes especially relevant when we come to consider the relationships among cognitive development, study skills, and language development (Chapter 6).

Natural objects, such as plants and animals (dead or alive), sand, earth, stones, minerals, tree products, marine products, and liquids of various kinds are less prone to cultural bias because they can be examined directly from various angles, and can be felt, tasted, smelled, and sometimes even heard. In other words, natural objects are capable of sending messages through all five of the non-verbal channels. No human being (sound technician, artist, photographer, sculptor, cook, dressmaker, beautician, or designer) intervened between the natural object and the student/observer, so that there is no opportunity to impose cultural values which are not present in the observer to begin with (e.g. revulsion toward snakes).

This is also true, to a lesser extent, of some of the artifacts used in instruction, such as the *equipment* used in domestic or natural science laboratories. The cultural bias is present, of course, in any human artifact, but it is an overt bias, more directly in line with the aims of instruction which employs the artifacts as non-verbal media. It is quite different from the hidden bias which may be present in the illustrations of a geography book, for example, which purport to show how people in far-away countries look or how they live and work. The conventions of natural science and mathematics, in short, are usually there for a good reason, whereas the convention that always puts 'north' at the top of the map may be harder to justify in objective terms. Artifacts and equipment, like natural objects used in instructional sequences, also provide the means for using the channels of sound, smell, taste, and touch as well as the visual channels.

The non-verbal channels, like the oral and written channels, obviously have a role to play not only in formal instruction but also in informal communication among the members of the school population, and they occur in self-instructional sequences, tests, and examinations as well as in teacher-directed learning activities -- just as much so in language courses as in other subjects of the curriculum. Unlike the verbal media, however, the non-verbal media do not often themselves constitute *subjects* of instruction -- with the possible exception of lessons in music, dance, painting, sculpture, and design, when these are offered as academic subjects in their own right. Tests, examinations, and self-instructional activities which rely entirely on the non-verbal channels, likewise, are more often associated with psychological measurement and therapy than with normal pedagogy. For these reasons, the non-verbal media and channels, though nearly indispensable in the typical school context, play different roles with respect to the main topics of this book, as compared with the oral and written media and channels.

Finally, it should be emphasized again that all four types of non-verbal media discussed above (teachers' body language, visual displays, natural objects, artifacts and equipment), depend predominantly on the students' ability to use the visual channels. It has been claimed that about five-sixths of all non-verbal learning takes place via the organs of sight. Teachers of the blind, and the blind themselves, might well argue the merits of this generalization. But the issue here is clearly more than the education of the sighted as opposed to the education of the blind -- also to be considered is the wide range of variation in sighted pupils' vision, with uncorrected disabilities such as myopia and astigmatism being fairly prevalent in some parts of the world.

At any rate, success in the education of the blind already makes the case that oral language media, along with the other non-visual media, are capable of taking over at least some of the functions of sight-dependent learning quite successfully, just as Braille alphabets can substitute for many of the usual written channels of instruction. This in turn suggests that the non-verbal channels as a whole are perhaps more supplementary than complementary to the verbal channels, despite the claims made for the importance of visual stimuli. And the difficulties encountered in the education of the deaf tend to suggest further that, of the verbal channels, the oral channels deserve the precedence that our definition of language implies.

1.5. The concept of text

Channels of instruction, as we have seen, may be oral, written, or non-verbal. In the first two cases, the use of any particular channel involves the selection of a specific language *medium* (or combination of media) -- that is, a language variety (or varieties) in which the message is to be encoded -- and only through knowledge of the relevant media can the message be decoded. Non-verbal channels, likewise, may involve behavioral and attitudinal codes, but the identification and interpretation of such codes is not a major concern here.

Up to now we have used the undefined term 'message' to refer to the content of whatever comes through a given channel and to whatever must be decoded according to the rules of the medium concerned. But this is a satisfactory term only when we are dealing with a single pair of channel users: the message producer (speaker, writer, or actor) and the message consumer (hearer, reader, or spectator). In actual instructional sequences, and indeed in all other forms of communication, this is often too simplistic a model. Many different channels and participants, and even several different language media, may be simultaneously involved in the same instructional or communication event.

Thus the term 'text', although it popularly suggests a print-on-paper channel, with the words in it having been written in a single language medium, usually by a single channel user, is still the most convenient term for the needed concept. 'Text', in fact, is used in several disciplines to convey the general notion of communication-event substance. But the term will need to be redefined for our purposes, in order to suit the educational context and the linguistic aspects of communication in that context. Such a definition is possible, it turns out, without any prior definition of the term 'communication event', and in fact it will suit our purposes best if we avoid any explicit reference to communication in the definition. The notion of 'text', so defined, can then be applied to all three major categories of language use in schools: language as a medium of instruction, as a subject of instruction, and as a medium of informal communication among school populations.

A *text* is the sum of the *recorded features* of channel use in a particular place over a designated period of time. The human beings who use the channels actively, in a recordable way, are the *text participants;* the number of human participants may range from none (in the case of a completely non-verbal text) to as many as can be recorded. If there are other persons present at the time the text is recorded, such persons are not considered text participants unless their channel use is recorded (e.g. laughter, nodding of heads), even if it is clear that the text 'audience' is capable of comprehending what is being conveyed via the text channels. The channels actively used can be oral, written, non-verbal, or any combination of these. In the case of oral or written channel use, the language medium may be a single one or any combination of different language media. The channels so used may be clean and clear, or they may be full of background noise, clutter, and distortion.

The degree of recoverability of the potential features of any text depends, of course, on the method of recording and its effectiveness. A television or film camera, for example, together with its microphones, will partially pick up whatever oral, written, or non-verbal features it is focused on. A radio or tape recorder microphone by itself will pick up the oral features, and the audible non-verbal features of the text (e.g. doors closing, horses galloping), to some degree. A human being equipped with pencil and paper or other recording instruments, whether he uses a conventional graphic system, shorthand, phonetic symbols, or a battery of graphic devices (which may include pictures, diagrams, and special coding systems) will succeed in recording at least some of the oral and non-verbal features of the text. But no electronic device or human agency can record *all* of the potentially significant features of a given collocation of channel uses, and hence no text can completely recreate the (potentially communicative) situation it attempts to record.

Four further points should be noted about this definition of *a text*. First, the existence of a text does *not* imply that a communication event has taken place. For example, this book is a text whether or not anybody reads it. It is a text because it records features of channel use: namely, print on paper, representing the conventional written form of the language medium called English, and implying a single participant. A recording of two different voices on tape alternating in their speech turns is a text with two participants, but it is not evidence of a conversation (communication event) until an analysis of the text, decoded in terms of the language medium employed, shows that at least one channel-user is actually reacting to the other participant in some way. A silent film with no captions is also an example of a text -- one which records non-verbal visual channels exclusively -- and if it has human participants it may similarly show evidence of being a communication event, or it may not.

The second point is that the manner of recording or re-recording channel use in any text does not necessarily correspond to the original channel use itself. This is most obvious with regard to the verbal channels: An original written text can be read aloud and an original spoken text can be written down (with some loss of features in both cases). But a non-verbal channel use can also be represented verbally ('The smell of jasmine filled the room'), or it can be represented through a different non-verbal channel (a vase full of jasmine depicted in the center of a room, with arrows indicating the convection of the odor). Even a verbal channel use can be represented non-verbally, as when an actor's gestures or lip movements give away the import of his spoken words which have been deleted from a film sound-track for the sake of propriety. Thus, while a predominantly oral text can perhaps best be recorded with the greatest fidelity by using another oral channel, such as a tape recorder, and while a written text is often best represented in print, and while the visual features of texts are better photographed than sketched or described, the recording channel does not always have to reflect the original channel use of the text.

The last two points follow in part from these observations, and are best stated jointly. The third point is that a text, of whatever kind, can be recorded *mentally* -- that is, recorded in the memory of an individual participant or observer in such a way that it is recoverable only by that individual. The fourth point is that the ability to record a text, mentally or overtly, does not imply that the recording agency, even if it is a human being, 'understands' the text -- it only means that the recording agency is capable of retaining and reproducing at least some of the features of the original channel use.

Thus a monkey can imitate human gestures, by first recording them as part of a non-verbal text and then reproducing them as his own version of that text portion. A very young child or a parrot can record features of an oral text and, even long after the event, reproduce them, whether or not the significance of the features has been grasped. A tape recorder, camera, or computer can record both verbal and non-verbal text features and reproduce them on command. And adult human beings can obviously record parts of conversations mentally, whether or not they have participated in them, and some can even give 'verbatim' accounts of the conversations at a much later time. Part or all of a written text can be stored in memory in similar fashion -- some people claim to do this by retaining a visual memory of the text, while others convert it into some sort of oral version for storage purposes, and so on.

It will be convenient, in examining various aspects of language use in schools, to have a special term for a text that has been recorded, in whole or part, for shorter or longer periods, by individual memory rather than by some overt means (print, tape, film, computer storage, etc.). We will call such an individual recording of a text *a text version*. The generalized symbol for any text becomes T, and the existence of a text version can then be symbolized by adding a lower-case symbol representing the individual who has mentally recorded the text, as follows:

T = original version of a given text
Tt = teacher's version of the text.
Tp = pupil's version of the text.

Like a text, a text version may be in any channel, medium, or combination, and it is always incomplete as a representation of the original event, whether that event involved communication or not. The concept of *text* and *text version* will be useful not only in considering the definition of school curriculum, in the last section of this chapter (1.8.), but also in examining the linguistic aspects of the medium of instruction and communication in schools and the various aspects of language as a school subject, in subsequent chapters.

1.6. Self-instructional channels

The channels of instruction which teachers do not directly control, either through their own presentation of a text or through the management of its presentation, can be grouped together as self-instructional channels. This category is not mutually exclusive of the three channel types which have already been discussed, but cuts across them -- that is, it includes oral, written, and non-verbal channels of certain types. In terms of pedagogy, the category includes everything from individual programmed instruction to educational radio and television (provided only that the teacher does not supervise or participate in the instructional sequence and thus contribute to the total text). Our interest here focuses on the oral and written channels so used, and on the special situations in which the student 'communicates' with a source of instruction whose human participants are not physically present and which does not respond in the usual ways (see 1.2. g,h and 1.3. f-1).

Most written channels and texts are, in fact, self-instructional channels and texts. That is to say, a teacher, librarian, or parent may be present while the student is engaged in reading (or otherwise reacting to) the written text, but this other person may not really be available for guidance or explanation of the text. Since independent and prescribed reading becomes a progressively more important component as the student approaches the higher levels of education, self-instruction also becomes a progressively more important learning strategy for the student to master. No matter how good his performance may be in organized classroom activities and in direct communication with the teachers, the student will ultimately succeed (and be judged) mainly on the basis of his performance with books and other forms of written texts, this being largely a solo performance. University students, not so long ago, were said to be 'reading history', 'reading philosophy', or even 'reading languages' -- i.e. not learning or being taught these subjects. This is still a fairly good description of what goes on at the higher levels of education today in many disciplines -- for example, the social sciences, law, and the humanities.

If the student must eventually instruct himself, and mostly through the written channels, his ability to read and understand the relevant language media becomes of paramount importance. How he can get to this stage, especially when much of his earlier instruction has been through oral channels and media which bear little or no resemblance to the written channels and media, is a question which we will be examining further, especially in Chapter 7. In the meantime, it should be kept in mind that any discussion of the media of instruction involved in a particular learning sequence must include self-instructional channels and texts as well as teacher-controlled channels and texts.

To sum up, both teacher-controlled and self-instructional channels, from the macrolinguistic rather than the microlinguistic point of view, are of three types:

1) Oral channels, the great majority of which require teacher presence and which therefore exhibit the greatest range of internal variation, both with respect to channels and to the media conveyed by the channels;
2) Written channels, the great majority of which do not require teacher presence and which exhibit less internal variation;
3) Non-verbal channels, the great majority of which are visual and some of which, as media, are subject to the same kinds of cultural influence as the verbal media.

The dichotomy between teacher-directed instruction and self-instruction is not an absolute one. It is partly independent, for example, of the factor of teacher presence: Self-instruction can take place with or without a teacher present, and it may or may not be prescribed by the school. But if a given topic or subject of study in which the student has a personal interest is not covered by the school's curriculum offerings, then the student has no option but self-instruction and is further limited by the school's library or laboratory resources. Self-instruction involves all three types of channels, but relies most heavily upon the written channels. Since a great deal of teacher-directed instruction is through the oral channels, the fit between the oral and written *media* used in a particular school becomes of paramount importance for the success of any instructional sequence or self-chosen line of inquiry.

1.7. Testing channels

Much of the content of instruction in schools later recurs as the content of tests, examinations, and other instruments designed to evaluate the success of instructional programs or to measure the degree of achievement of individual students in those programs. The channels of tests and examinations, moreover, are essentially the same ones as occur in instructional sequences, and for at least some subjects in the curriculum, channel use may occur in about the same proportions for both testing and instruction. Since the teacher (or examiner, or another student) does not normally give any assistance to the examinee as he responds to the stimuli coming through these testing channels, and since it is usually possible to learn something during a test, the channels, media, and texts of testing might logically be called special cases of self-instructional channels, media, and texts.

It would be tempting, therefore, to define the *school curriculum* simply as the aggregate of whatever texts are conveyed through the channel types already described, and to examine the linguistic aspects of school curriculum on this basis. The aggregate would consist of all the texts of instructional sequences, including language instruction itself, plus the texts of examinations and tests conducted by the school.

The reasons for *not* defining the school curriculum simply in terms of channels and texts are very complex, and will be discussed further in the last section of this chapter. First, the language *media* of tests and examinations are not always the same as the media of instruction in the corresponding curriculum areas or subjects. In some school systems, students have a choice of test media; in others, the language of examination may be totally different from the language of instruction, so that students in effect have to translate what they know of a given subject in order to convey that knowledge in the test medium. Second, the *content* of examinations, because of time constraints and test security considerations that require sampling, is usually less than the content of texts in the corresponding instructional sequences. On the other hand, tests may include content which has never been taught at all, or which has never been made available through the provision of self-instructional materials and texts by the school.

Finally, the content of tests and examinations is often determined *outside* the school where the actual instruction takes place, and the details of this content may not be known in advance to the teachers responsible for the subjects concerned. In such cases, the content represents the aims and specific objectives of whole school systems rather than of individual schools. It also includes (ideally, if not actually) only what is considered to be the *most important* content for each subject or curriculum area concerned, regardless of local considerations. This last observation applies, in a vital and often destructive way, to that part of the typical school curriculum which consists of *language instruction* for its own sake.

All language courses themselves consist of instructional sequences, involving the use of channels and media of different types (see Chapters 9 and 10). In addition, formal language courses may be subject to both internal and external examination, just as courses in the general curriculum are. The conflict between the demands of external language examinations and the requirements of language instruction to support the media of instruction in other subjects, in fact, defines one of the central issues of this book (see Chapter 11). Even in the best of school situations, the role of language courses in support of the various media and channels of instruction in general curriculum areas is almost never a clear-cut one.

For these reasons, the media and channels of testing have to be recognized as a separate category -- similar to, but distinct from, self-instructional media and channels. Like the self-instructional channels, however, the testing channels include oral, written, and non-verbal subtypes, with written channels perhaps being dominant in school testing and certainly dominant in school-system or external examinations. The fit between oral and written *texts* in the 'same' language is also a factor here, and most noticeably so in the way it affects the fit between language instruction and external language examinations.

The specific topic of *language testing* is dealt with extensively in Chapter 9. The only point which needs to be made at this stage is that the possible channels, media, and texts which may occur in language testing are in no way different from those available for the testing of other subjects.

1.8. The school curriculum

If we cannot define the school curriculum, for our purposes, simply in terms of the texts conveyed through the various instructional and testing channels, how then can we define it? There is so much debate in educational circles as to the meaning of the general term 'curriculum', and even as to the meaning of the more specific terms 'the curriculum of School X' or 'the curriculum of School System Y', that it will not be feasible to adopt a ready-made definition of this central concept either. The term 'curriculum', at least, must be defined in such a way that it can be used meaningfully with reference to the other topics of this book. Then the terms 'school' and 'school system' can be used in connection with it in the senses that have been defined in Section 1.1.

The linguistic aspects of curriculum, as we have seen, are not confined to the direct relationships between media and channel use, but also involve such parameters as the overall learning process, the measurement of success in schooling, the social and psychological development of students, and their acquisition of specific knowledge and skills in subjects other than language subjects. All of these parameters are included in some definitions of curriculum. It remains, then, to recast and combine these definitions in terms of our specific interests.

The *components* of curriculum most often mentioned in definitions of curriculum are the following:

1) The aims, goals, and specific objectives of instructional programs in schools. These may be explicitly stated in separate curriculum documents, or they may merely be inferable from observation of actual instructional sequences, from recommended

teaching/learning strategies, from the teaching/learning materials and/or the tests and other instruments used to measure the success of instructional programs or individual achievement in them. If the aims and objectives, explicit or implicit, are broken down by discipline or subject area, the term 'syllabus' is often used for separate components of the curriculum thus defined.

2) The teaching/learning materials themselves, which are prescribed and/or made available by the schools. These usually include materials issued to or bought by the students (e.g. textbooks), materials intended for teachers (e.g. handbooks), materials made available to individual students on a loan basis (e.g. library and classroom collections), and supplementary materials prepared by teachers specifically for presentation in a given instructional sequence -- these last are often ephemeral, not maintained by the school or available outside a particular class.

3) The recommended or actual teaching methodologies and learning strategies of the schools. This category includes not only the various techniques used by teachers in classrooms, but also the organization and management of the classes themselves -- which in turn may include team teaching, peer teaching, self-instruction, and other management options, alongside streaming, systems of elective, optional, and required courses, credit systems, and other organizational options.

4) The tests and other instruments used in the evaluation of the various instructional programs of the schools. These instruments may be prepared and administered within or outside of the school -- in the latter case they usually apply to whole school systems rather than to individual schools. Tests and examinations normally reflect all the previous components of the curriculum (1-3 above) in some way, but their content and emphasis may be determined more directly by one particular component more than any other -- for example by

> the actual materials used more than by the specified aims or recommended strategies of instruction.

Most central to the concept of curriculum would appear to be the first and last components described above. For our purposes, the testing and evaluation instruments are selected as primary criteria for the definition of school curriculum in preference to the aims and objectives of the school or school system program, for the simple reason that in the typical educational situation it is easier to determine what specific measurement and evaluation instruments are being used than it is to determine the specific objectives at each level of instruction. Another consideration is that the fourth component of curriculum is the one most likely to reflect actual *practice* in schools, as opposed to wishful thinking. Whatever has been recommended in terms of aims and teaching/learning strategies, for example, may not be substantiated in terms of curriculum materials actually available in the schools. And the oral texts of classroom interaction between teachers and pupils, in spite of their obvious importance to the success of instructional programs, are usually not recoverable and are hence left out of consideration. The general nature of these oral texts, however, is more likely to be inferrable from a knowledge of the nature of the examinations that the pupils are being prepared for, than from any of the other components of curriculum.

Our definition of curriculum, therefore, gives priority to instruments of measurement and evaluation, with aims and objectives next and teaching/learning materials last.

Curriculum is defined by the content of tests and examinations which students in a given school undergo at various stages of instruction and which they are expected to undergo soon after leaving the school. If no tests or examinations are given or expected, curriculum is defined by the stated aims and objectives of the school or school system. If no aims or objectives are stated for a given level of instruction, curriculum is defined by the content of the instructional materials and texts used by the school (including the oral texts of classroom interaction, if these are available or in part recoverable from the teachers concerned). Curriculum cannot be defined in terms of teaching methodology and learning strategy alone, even when this is the only known component of the curriculum. (Note that this definition makes it possible to distinguish between curricula for individual schools and for whole school systems, because local tests are considered alongside external examinations. It also makes it possible to account for different levels of curricula -- see Section 4.4.)

With this general definition of curriculum in mind, we can now define 'language curriculum' as a special case of school or school system curriculum, and define it in such a way as to distinguish it from another necessary term, 'language instruction'. It will be more useful, in fact, to define the latter term first.

Language instruction refers to any instructional sequence in which the ostensible subject of instruction is some language variety or varieties. The language varieties studied may or may not also occur as media of instruction for other subjects in the same school, and the results of language instruction are not necessarily examinable. Normally, sequences of language instruction, or 'language courses', are designated solely by the name of some single language or speech variety (the ostensible subject of the instruction). Thus, courses called 'English', 'Chinese', 'Spoken Swahili', and 'Early and Popular Latin' would automatically qualify as language instruction, whereas courses called 'Language Arts', 'Modern French Literature', 'Public Speaking', and 'Chaucer' would not. This is perhaps an arbitrary distinction, but the category defined as language instruction is probably large enough to include most instructional sequences which are relevant to our central concerns.

Since language instruction as such is conducted in the same kinds of sequences as instruction in other subjects, it shares the same pedagogical characteristics. It involves the use of channels and texts of precisely the same types as other instructional sequences, and it may also involve language *media* other than the one corresponding to the ostensible subject of instruction -- for example, in the 'translation' and 'grammar and explanation' models of language instruction (see 10.1, 10.2). Some or all of the content of the instruction, similarly, may be tested or examined during or after the course of study; if so, language instruction overlaps partly with language curriculum. (As our definition of the latter term will show, however, the essential distinction is preserved.) Different models of language instruction as such are considered in detail in Chapter 10.

Language curriculum is that part of curriculum for which the tests and examinations (or the stated aims and objectives of instruction, or the teaching/learning materials) bear language-variety labels, or in which the content is expressed in terms of linguistic aspects of some curriculum area. By this is meant that, in order to qualify as language curriculum, the content of the tests and examinations must resemble the content of language instruction, as defined above, more closely that it resembles the content of other types of instruction. If no language tests and examinations are given or expected, language curriculum is defined analogously to general curriculum -- that is, on the basis of stated aims and objectives of the instruction, and then on the basis of instructional materials and texts, if information about the aims is lacking.

General curriculum is a term which will be used whenever it is necessary to distinguish language curriculum from the rest of the curriculum. It means 'curriculum minus language curriculum'.

A language curriculum is that part of the total language curriculum for which the test(s) and/or examination(s) bear a single language variety designation. For example, the total language curriculum of a certain school might include Swedish, German, and English, with separate tests in each language given at each stage of the educational progression. The cumulative content of the tests for a single language variety would then constitute a language curriculum -- for example, the Swedish language curriculum might be based on tests administered at primary, lower secondary, and upper secondary levels. A language curriculum of this type usually (but not always) represents a continuum: that is, those who pass the tests at each stage are presumed capable of proceeding to the next stage, and so on.

A language course, then, we can simply define as a sequence of language instruction (including self-instruction) which corresponds to some stage of a given language curriculum. Thus the school mentioned in the preceding paragraph might have a large number of Swedish, German, and English courses offered in connection with its total language curriculum. But it is to be noted that there are other kinds of language instruction, even in schools, which do not fit this definition. A 'Spanish conversation group' might be organized in somebody's home, for example, without any tests, stated aims, or instructional materials. Such an undertaking would qualify as language instruction, under a loose interpretation of our definition, but it would not qualify as a language course.

A very important point, in this connection, is that language courses may include content *not represented in any language curriculum,* and vice versa. In the typical case, the language course is designed not only to help students to pass the tests and examinations of the corresponding language curriculum, but also to help them acquire linguistic and communicative skills which are not tested as such. The blueprint for a given language course is called a *language syllabus*. The precise definition of 'a language syllabus' is very complex, and will not be attempted here, but the entire relation of language instruction, curriculum, and syllabus is explored at some length in Chapter 11.

A typical school's language curriculum, like its general curriculum, will be divisible into levels in another way, quite apart from the levels represented by stages in the educational progression (primary, secondary, tertiary, etc.). These language curriculum levels are determined by the *source* of the tests and examinations which define the curriculum (or the source of the stated aims of instruction and the teaching/learning materials). In this sense language curriculum can be local, provincial, national, international, or represent any combination of these levels. In a slightly different dimension, language curriculum can be occupational, doctrinaire (i.e. religiously or politically oriented), artistic, or aimed at cultural maintenance, and so on. Thus a given language course, at any educational level, may reflect conflicting aims and requirements, some of which have nothing to do with the media of instruction in the general curriculum of the school concerned.

To sum up, language instruction is different from language curriculum, and both may involve more than one language variety. We still need to make one final distinction, regarding the student's rather than the school's view of language development: a distinction between *language learning* and *language acquisition*.

Language *learning*, for our purposes, will always mean a gain in language proficiency which is due to conscious effort on the part of the student. This type of learning usually takes place in connection with some sort of instruction from teachers, and quite often takes place in language courses, but it may also take place through self-instruction, inside or outside the school.

Language *acquisition*, on the other hand, means a gain in language proficiency which takes place without conscious effort on the part of the student -- for example, as the result of instruction in other subjects, or through peer interaction. Language acquisition is the more general term; it will be used whenever there is any doubt about the student's specific effort involved in acquiring language proficiency. Like language learning, language acquisition may take place both inside and outside the school. Language acquisition within the school walls is discussed at some length in Chapter 5.

CHAPTER 2

THE MEDIA OF INSTRUCTION

2.1. 'Mother tongue'
2.2. 'First language'
2.3. 'Second language'
2.4. 'Foreign language'
2.5. 'Classical language'
2.6. 'Bilingual education'
2.7. The prescriptive view
2.8. Language standardization

In this chapter and the next, we will be concerned mainly with the *media* of instruction, and specifically with problems of identifying and classifying the almost infinite variety of oral and written media that actually occur in schools around the world. We will later be concerned with problems of measuring the distance between languages and dialects so identified and classified. Since many of these language media also occur as the ostensible subject matter of language *instruction* or form part of the content of a particular language *curriculum*, we will also be seeking a classification that accommodates this aspect of the use of language varieties in schools. In this chapter, we will first look at the way schools typically classify language varieties and how they are apt to indicate distances between them. In Chapter 3, we will review what the different brands of grammar, linguistics, and related disciplines have to say on the subject of language variation, before attempting to define language types and choosing a method of measuring the distances between school and home languages in Chapter 4.

Broadly speaking, the view of educational authorities and general curriculum developers about language variation is much the same as the popular view: Languages which have different names are somehow different ('Hindi' cannot be the same as 'Urdu'), and those which retain the same name are somehow the same, regardless of changes over time (Classical Greek or Arabic vs. Modern Greek or Arabic, for example). It is widely believed by the general public and some educational authorities, further, that dialects are no more than colloquial aberrations from the standard written languages which are the *real* languages of schools, and so forth. The oral and written channels of instruction are lumped together, and both are in turn confused with the texts of language courses. Both language media and language subjects tend to be categorized according to labels which refer to the distance between the designated school languages and the presumed languages of the home or the community.

The language labels used by the typical school are often quite useless for characterizing the actual linguistic relationships involved, and they blithely ignore the sometimes serious lack of fit between spoken and written versions of the 'same' language. (This is one reason why many school systems have 'reading specialists'.) But since the labels have a wide currency, both in the literature of education and in popular parlance, they will have to be dealt with before a discussion of more relevant topics can be undertaken. In the first six sections of the chapter, the terms involved are placed inside quotation marks to emphasize their lack of precision, but in each case an attempt is made to locate the central meaning of the popular or educational term.

2.1. 'Mother tongue'

Support for the 'mother tongue' as the medium of early instruction in schools is nearly universal. Over forty years ago, no less a body than UNESCO officially endorsed the principle that mother tongue education was in effect the right of every child on earth. This point of view was principally inspired by educators from the 'developing' countries, and especially from those countries which had lately been under colonial rule and had undergone the imposition of foreign (usually world-language) media of instruction by the colonial powers concerned. It was a natural reaction to a kind of educational heritage which had not been arrived at in a particularly democratic manner, and which had been perceived as leading to all sorts of evils: elitism in schools, decay of indigenous cultural values, reduced output of native-language literature, and deprivation of educational opportunities both for the poor and for the less gifted, to name just a few of the allegations. And indeed, to an impartial observer, schools using non-indigenous language media often did have just these bad effects, among their total effects.

In the last decade or so, this move toward education in the 'mother tongue' has increasingly spread to the 'developed' countries as well. Linguistic minorities in nation after nation, perhaps coming to realize that they had been internally colonized, have begun demanding either monolingual education in the 'mother tongue' or bilingual education that somehow includes it, at least for the early stages of schooling if not for all of the education of their children. In many countries, both developed and developing, the issue has been taken far beyond the schools and extended to other policy areas as well. The right of using the 'mother tongue' in courts, in the military and civil services, in parliamentary debate, and even in regional and international negotiations has been claimed by many different national majorities, pluralities, and minorities. In countries which have no private sector as such (for example, socialist and theocratic nations), the same issue has been raised with regard to employment, commerce, and the mass media, so that government policy on these (normally private sector) language use areas has sometimes had to be reconsidered or changed.

All this has been going on despite the fact that nobody knows what 'mother tongue' actually means. Speaking both linguistically and sociolinguistically, the term is hardly a useful one. For example, if the 'mother tongue' of a black child in the Detroit ghetto is 'English', then what is the 'mother tongue' of his white counterpart in the slums of East London? If the two children do not speak the 'same language' natively, then what is it that they do speak? If the 'mother tongue' of a Hokkien-speaking child in Singapore is 'Chinese', then what is the 'mother tongue' of a Cantonese-speaking child in Hong Kong, a Teochiu-speaking child in Bangkok, or a Mandarin-speaking child in Beijing? If they all speak the same 'native language', how is it that they can't communicate with each other? If they speak different languages, in how many dialects of these languages must separate education be provided, according to the UNESCO principle?

The prevalence of bilingualism, diglossia, and code-switching in many modern societies adds another dimension to the basic problem. If a pre-school child speaks to his maternal grandparents in one language variety, to his paternal grandparents in another, and to his own parents in either of these or a third language variety, then what is this child's 'mother-tongue'? Should he then have three linguistic options for his education? If so, should he or his parents choose among them, and so forth?

It might be possible, at least in theory, to formulate a definition of 'mother tongue' by making a linguistic description of each individual child's speech patterns and comparing the descriptions obtained from the same educational district or community, with a view to establishing some sort of grouping criterion based on mutual intelligibility of the speech patterns. This grouping criterion then might be applied to the selection of media of instruction in schools. But the result of such an exercise, in a great many communities and school districts, would inevitably be a very minute classification of 'mother tongues', and in other districts and communities would be hardly worth the effort involved.

Such considerations are involved, however, in terms like 'Black English', 'Cockney', 'Cajun', and 'Chicano'. Whenever these terms are used in a linguistic sense, the implication is that they are more than mere ethnic labels, and that some actual linguistic description and classification is available to justify them. But even when the requisite research has been done, on some community-wide or geographic basis, who is to say that a given child bearing such a label really fits the description in a linguistic sense? The case of the child who obviously has more than one 'mother tongue' (so defined) would still present a problem in the typical multilingual community.

The main problem with such a micro-classification of 'mother tongues', of course, is not a social but an economic one. Even if 'mother tongues' could be identified and grouped linguistically, and the children who speak them identified, how could educational authorities be expected to provide teachers and teaching/learning materials for each separate 'mother tongue'? More importantly, how could they assemble these teachers and materials in the proper place: the neighborhood school? How could they assemble them at the right time: right now, not next year or the year after (because the neighborhood will have changed by that time)?

Even assuming the school authorities could cope with the financial problems at the level of primary education, what would be the method of schooling after the children of a given (genuine) mother-tongue medium had passed beyond this stage? As many developing countries are now finding out, it may be possible through concerted effort to provide reasonably good basic textbooks in the native language, but it is next to impossible, in the short run, to provide good native-language libraries and other resources for individual learning. Beyond the secondary level of education there is less and less written material available in 'mother-tongue' media and more and more available in various standard-language media, especially in world-language media.

(The same observation applies to pre-recorded, broadcast, and other oral media not directly produced by teachers in schools.)

A parallel scarcity of teaching staff is often found from the secondary level upward. After primary school, the teachers themselves must be more specialized, in terms of their control of various disciplines that form the general curriculum. If general curriculum subjects must be offered in many different language media, the teachers must be specialized not only in the disciplinary sense but they must also be capable of teaching their subjects in the appropriate language media. In such situations, the financial constraints of teacher recruitment, training, and assignment are added on top of the costs of maintaining teaching/learning materials and library facilities in several different language media.

The central meaning of the term 'mother tongue' (if indeed there is any) is probably 'oral language/dialect used in the home of the pre-school child'. In addition to the problems already noted, there is one further point to be made about the ideal goal of mother-tongue education: Even for those children who are fortunate enough to have a micro-mother-tongue which closely resembles some standard world language (e.g. French, English, Mandarin, Russian, Spanish), there is still the always-considerable gap between the oral channels and the written channels to be bridged by the school. The enthusiasm for the 'mother tongue' as medium of instruction, therefore, may be justifiable in ideal terms, but the realization of the ideal is difficult even in the best of circumstances.

There is also a considerable overlap between the term 'mother tongue' and some of the uses of the term 'first language' (next section) -- so much so that in many schools and school systems it would be impossible to determine which of the two terms is more applicable to the medium of a given instructional sequence.

2.2. 'First language'

The term 'first language' has so many different meanings in various countries, societies, and regions that it would be useful to list the most important meanings before going on to a discussion of this type of instructional medium (and language course designation). As in the case of 'mother tongue', no distinction is made between spoken and written versions of what may or may not be the same language, and in some cases there is no writing system at all corresponding to what is called a first language. Following are some approximate meanings of the term, with examples.

1) 'Mother tongue' in the micro sense (a dialect of some language), shared by all or nearly all pupils -- schools in established monolingual communities with little or no population turnover.
2) The native language (including dialect differentiation) of all or nearly all pupils -- urban schools in largely monolingual countries such as Japan, Korea, and Denmark.
3) The native language or dialect of the majority of pupils in a particular class or school -- the early years of local schools in multilingual countries such as the Philippines, Switzerland, and Indonesia.
4) A standard national language which is also the majority language in the country concerned -- France, Germany, England, the United States, and many other countries with large monolingual majorities.
5) A national, official, or educationally dominant language which is not necessarily the majority language in the country, community, or school concerned -- Malay in Malaysia, Spanish in Peru or Paraguay, Russian in some administrative divisions of the USSR.
6) A sub-family of languages with a single standard written language dominant in education -- Chinese in China and Taiwan.
7) A dead classical language with a modern spoken version for instructional purposes -- Latin, Greek, Arabic, and Sanskrit in certain religious schools (see also 2.5.).
8) Whatever the main medium of instruction in the school is, regardless of the number of students speaking it natively in the country, community, or school concerned -- English, Mandarin, Malay, and Tamil in Singapore.

9) Whatever recognized language or dialect the individual student is presumed to have acquired first (chronologically), regardless of his present language-use patterns and the medium of instruction in the school concerned -- the municipal school system of Bombay, where some 14 'first languages' have been so recognized.

Two different meanings of the term 'first language' may in fact co-exist or overlap in the same school. For example, meanings 2), 3), and 4) might all be found to apply in German schools where Plattdeutsch and Standard high German are both used as media of instruction. Meanings 2), 5), and 8) might all apply in Malay-medium schools in Singapore in which all the students are speakers of some dialect of Malay. It is characteristic of 'first languages', except in meanings 1), 3), and 9), that schools which offer most of their instruction in this medium nearly always require many years of language instruction in it as well. The 'first-language' instruction as such sometimes includes the study of literature and/or moral values of the culture that is associated with the language variety concerned.

Thus the central meaning of 'first language' (if there is one) is probably slightly different from that of 'mother tongue'. The emphasis in the former case is on the *standardized quality* and *importance* of the medium so designated, while the emphasis in the latter case is more likely to be on the nativeness and ethnicity of the speech variety concerned. 'Mother tongues' do not always have literatures, and indeed the cultural values associated with them may be implicitly or explicitly rejected by the school. If a given 'mother tongue' is worth studying in its own right, for either utilitarian or cultural reasons, it is much more likely to be accorded the status of a 'first language'. The fact that many languages with this designation also happen to be standard national or provincial languages (see 4.1.) argues in favor of taking meaning 4) above as the most central meaning of the term 'first language' -- i.e. a standard language which is also the majority language of the country (or province, or state, or region of the country) in which the school is located.

2.3. 'Second language'

The term 'second language' is nearly always associated with one or more of the meanings of 'first language' given in the preceding section, and derives whatever meaning it has by way of this association. Likewise, 'second languages' may be dialects, languages, or language sub-families in the linguistic sense, and no distinction is made between spoken and written versions. 'Second languages' can even be 'mother tongues' (as in the case where 'first language' simply means the main medium of instruction). The literature and moral values of 'second-language' cultures may also be studied, but language instruction as such is usually provided or required for the 'second language', whatever its function in the school. Following are some of the meanings of the term (the numbering of the items does not correspond with the ordering of the list given in 2.2.):

1) Any medium of instruction or language course introduced later than the 'first language'.
2) Any medium of instruction used less often that the 'first language', but used simultaneously with it.
3) A course of instruction in a language other than the 'first language', offered or required in the expectation that the 'second language' will some day become a medium of instruction, at least for some students.
4) A 'resource language', or language which is not an actual or future medium of instruction, but is expected to be of benefit to students in various disciplinary and vocational fields in furthering their knowledge and skills, especially through the written channels of the new medium.
5) In monolingual education, the principal (non-'first') language course for which there is an academic requirement — in other words, a 'second language' component of a total language curriculum.
6) In bilingual education, the 'other language', whether or not it is used as a formal medium of instruction or taught as a separate subject in the curriculum.

7) In multilingual education, the second most important language.
8) Any language other than the 'first language' which is given priority in language instruction, in language curriculum, or for any reason at all (for example, a permitted supplementary medium which teachers are authorized to use for explanatory purposes in special circumstances).
9) Any language which is chronologically the second to be acquired or learned by individual students, or by groups of students.

The term 'second language' is also used in non-educational contexts in some countries. The typical intent of such usage is to identify a language variety which is neither a 'mother tongue' nor a 'first language' for a significant number of citizens, but which has so much importance as a vehicle of communication (real or symbolic) within the society that it cannot really be considered a 'foreign language' (see next section). English is so designated in many different nations, or parts of nations, on all five continents, and French is another common recipient of this usage (hence the terms 'anglophone' and 'francophone' with reference to various African countries). In Canada, for example, quite apart from questions of education, French is a 'first language' mainly in Quebec, but it becomes a 'second language' in many other provinces. Hindi is a theoretical second (or third) language in those states of India where it is not spoken by a majority of the population or used as a medium of instruction in schools, and so on.

This usage, however, is normally *not* applied to lingua francas, pidgins, and creoles, no matter how important they may be for communicative functions in the society or nation concerned. The honor is more usually reserved for highly standardized languages with important literatures in the technical and scientific disciplines as well as in the arts, humanities, and social sciences. Quite often the 'second language' (of a nation rather than of a school system) is in fact one of the 'world languages' -- or languages of international communication.

In order to establish the central meaning (if any) of the term 'second language' these non-educational uses of the term should probably also be considered. That is, besides the medium of instruction in schools and school systems, we should take into account the use of a widely-known language as a means of communication within a society or nation (for example, in commerce or the mass media) and as a 'window' looking outside that society or nation toward the rest of the world and facilitating contact with it and the gathering of information about it.

Combining meaning 4) above with the non-educational meanings of 'second language' yields the following definition, which may be the central one as far as the overall usage of this term is concerned: A 'second language' is one which is widely studied in schools as a prospective medium of instruction or resource language, either inside or outside the school, *and* as a prospective means if wider communication, either inside or outside the nation, society, or region where the language is studied. This sort of definition roughly covers all of the educational meanings listed above, except for meanings 1) and 9).

2.4. 'Foreign language'

As noted in the previous section, the term 'foreign language' may overlap somewhat with 'second language'. This is especially likely to happen wherever a standardized world language with an important literature plays a prominent role as a medium of instruction or means of communication in a country to which it is not indigenous. But even if this were not so, what is meant by 'foreign language' would be difficult to define. The problem, in fact, lies in determining which languages and dialects are indigenous to a given country and which are foreign. Since populations of the same territory change over time, from a demographic point of view, how far back in history does one go to make such a determination -- 50 years? 100 years? 500 years? What are the social factors that affect whether a given language variety is perceived by the inhabitants of a geographical region as indigenous or foreign? For that matter, which groups of inhabitants should be consulted for their views on such matters?

Every language which has a major role to play in a society, either in education or in general communication, sooner or later develops its own group of native speakers. This is just as true of 'market languages' or pidgins in the process of creolization as it is of world languages like English, French, Mandarin, Russian, and Spanish. Such languages may not have been indigenous to many countries originally, but they now have significant numbers of native speakers in many more countries than before. Even when the relevant demographic or census data are available, attempts to distinguish indigenous from foreign languages soon degenerate into a numbers game. What percentage of native speakers of a given language, as revealed by census figures, is to be regarded as 'significant' -- 5%? 3%? 0.5%? What guarantee do we have that this percentage will not change soon after we have finished classifying the language? On the other hand, minority languages which we would definitely want to classify as indigenous (from a historical point of view or because they do not occur in other countries) may have obviously insignificant numbers of native speakers, in terms of the total population, and be ruled out of consideration for that reason -- for example, the 20-odd Tasaday speakers in the Philippines, who are about as 'indigenous' as anyone can get.

The attitudinal and other social factors involved in the perception of the role of different languages in a given society are no more promising as usable criteria than the statistical data of the census. Although these factors have been studied in some depth by sociolinguists and anthropologists in many countries, the findings depend altogether too much on whom we ask for opinions, and even the most sophisticated sampling techniques only lead us back to dubious percentages. For example, the black and white citizens of Zimbabwe/Rhodesia might have quite contradictory answers to the question 'Is English indigenous to Zimbabwe/ Rhodesia?' Would it be justifiable to simply take an average of such opinions? How would this be any better than counting the present percentage of native speakers?

In Thailand, all language varieties not related to the national language (Thai) are considered 'foreign' if they are spoken outside Thailand as well as inside the country; small tribal languages, however, are considered 'indigenous'. The case of Malaysia is even more interesting. Certain tribes in the central highlands of the Malay peninsula and in North Borneo are designated as *orang asli* (original people) by the Malays themselves, in the apparent belief that the arrival of these tribes in the geographical areas antedated their own arrival. But ethnic Chinese and Indians, most of whom arrived later than the ethnic Malays, are not considered 'indigenous' by the Malays even when they have lived in the country for generations. Only the *orang asli* and the Malays themselves are considered 'indigenous'. All of these groups together, however, do not comprise much more than 50% of the total population of Malaysia.

A parallel to this situation in the continental United States would be for the white Anglo-Saxon Protestants to regard the American Indians as aborigines, themselves as 'indigenous' people, and everybody else as 'foreigners'. In fact, one might be able to find statistically significant support for this classification in the United States even today. As late as the 1950's, when the teaching of 'foreign languages' in American schools was receiving a new and vigorous emphasis, the principal 'foreign languages' taught were in fact French, Spanish, and German. Even at that time, there were significant populations of *all* these languages living *within the borders* of the United States, for whom English was a 'second language'. (The various minority groups in the country had not at this stage been very vocal in their demands for 'mother-tongue, education.)

No matter how desirable it might be to cite census data or sociolinguistic survey results as evidence in determining which languages are 'indigenous' to a society, country, or region and which are 'foreign', the most operative answers to the questions are still *political* ones -- not linguistic, ethnic, religious, or social ones. That is to say, the Chinese and Indians of Malaysia are 'foreigners', and the Malays 'indigenous', because the present Malay-dominated government says so. (In education, however, Malay, Mandarin, and Tamil are all used as media of instruction; one of these is called the 'first language' with English being the 'second language' for everybody. Malay is also designated as 'the national language'.)

Whoever governs Rhodesia/Zimbabwe at a given time decides whether English is a 'foreign' or an 'indigenous' language in that country -- not demographic figures or sociolinguistic surveys. Russian cannot be a 'foreign' language in any part of the USSR, nor Mandarin in any part of China, because these languages have been declared 'indigenous' by those in authority in the respective countries; the question as to whether they are in fact majority languages is irrelevant. The apparent principle involved in the Russian and Chinese cases is that colonies contiguous to their mother countries in the land mass of Asia are not conceived as colonies; a separation by water would appear to be the criterion for colonization.

The term 'foreign language', however, is still widely used in educational circles as if it meant something specific. Therefore it might be worthwhile to try to locate the central meaning of this term also, as we have done with the preceding three terms. The most likely meaning is the following: For a given society or nation, a 'foreign language' is any language variety not considered, by those in authority at the time, to be indigenous, but nevertheless thought to have some importance to the society or nation. Such a definition helps to explain why relatively small, seldom-studied languages are not included in this category, at least in the educational context. In practice, most of the officially-designated 'foreign languages' which are used as media of instruction and prescribed or offered as language subjects are also languages of international or inter-regional communication, and many are associated with past or present colonial empires. In a sense, 'colonial language' would possibly be a more apt term for what is usually meant when a language is classified as 'foreign' for no other apparent reason.

2.5. 'Classical language'

This last category has to be included here because of certain dead languages which are not only taught as school subjects but also used as media of instruction, and which do not fit any single one of the previous categories. Surprisingly, some of the 'classical languages', besides serving as written media and as reference sources, can also be said to serve in the oral channels of instruction. The usual case is the chanting, reading aloud, and/or memorization of oral religious texts which have been recorded in a no longer communicatively-spoken form of the language concerned. To the extent that these oral texts of the dead language can be interpreted meaningfully by the student, and to the extent that the student acquires new information or undergoes some other sort of learning experience, it can be said that the chanting, reading aloud, or memorization of the religious texts constitutes an oral channel of instruction. Then, of course, the silent reading and interpretation of written classical texts provides a reinforcement of the learning, through the corresponding written channels.

The dead languages most frequently occurring as instructional media are Classical Greek, Latin, and Hebrew, the Arabic of the Quran, Aramaic, Sanskrit, Pali, Avestan, and certain archaic versions of Chinese. Although all of these particular 'classical languages' are associated with one or more specific religions, in their written forms they are resource languages for other types of study as well. In that sense they serve as media of instruction in non-religious subjects, as do many other dead languages -- Classical Japanese, Old Norse, Vulgar Latin, etc. These languages may, in fact, be introduced very early in the schooling sequence, for historical and cultural as well as religious purposes, and they are not by any means confined to university or other high-level academic uses.

The category of 'classical languages' overlaps not only with 'foreign languages' (in the sense that most of the dead languages were indigenous, originally, to only a few countries) but also with 'mother tongues', 'first' and 'second languages'. For example, the bilingual education policy of the Philippines (since 1974) specifies English and Filipino as the primary media of instruction in schools, but also authorizes 'Arabic' -- this last presumably for Muslim areas in the southern islands. It is fairly clear that, in this case, 'Arabic' does not refer to any of the modern varieties of that sub-family of languages which are spoken in West Asia and North Africa today, but rather to the classical language of the Quran, because the 'mother tongues' of the students who would use Arabic as a medium of instruction are not very different from those of their non-Muslim neighbors, and no modern version of Arabic is spoken to any extent in the region concerned. In Thailand, a similar place is given to 'Arabic', under the latest language policy, and for similar reasons.

In twentieth-century Greece and China, where most of the languages and dialects now spoken are directly descended from now-dead languages formerly spoken in the same geographic/political regions (as is the case in many 'Arabic'-speaking countries), the argument is often heard that the classical languages are *not* dead but live on as variants of existing 'mother tongues'. This argument is of course strengthened, for the linguistically unsophisticated, by the existence of writing systems which have been preserved relatively unchanged for a thousand or more years. Citizens of the modern countries concerned may, in fact, react quite emotionally when it is pointed out to them that the process of linguistic change (see 3.2) has made this position rather untenable.

In the Romance language area of Europe, the existence of separate *national* languages which have all descended from the same source as Classical Latin, such as French, Spanish, Portuguese, and Rumanian, has prevented a similar confusion from arising. Even in its home country, Italy, Latin is distinguished from Italian, is recognized as a dead classical language, and is not thought to be anybody's 'mother tongue'. The contrast in the popular perception of Latin, on the one hand, and Greek, on the other, reinforces a point made earlier: It is *political* boundaries and perception rather than linguistic or ethnic ones that count the most. The recent revival of Hebrew, as the national language of Israel, is another case in point. While scholars of the ancient and modern language know better, many modern Israelis believe that they are speaking the language of their forefathers in a relatively unchanged form.

The case of Sanskrit is still different. In India, where the modern languages of the northern part of the country are recognized as being different from each other, and where several of them serve as state languages (just as the Romance languages serve as national languages in Europe), 'Sanskrit' is listed as one of the official languages of education. Classical Sanskrit, in fact, occupies the same position with regard to the languages of northern India as does Latin with regard to the Romance languages; like Latin, it has no direct modern descendant. Yet it is granted the same status in education as living languages such as Hindi, Bengali, Gujerati, and Marathi. As in the case of 'Arabic', only the religious significance of 'Sanskrit' can explain this anomaly.

Thus, not even for the 'classical language' category can we draw a clear line separating these languages from other media types. The central meaning of the term 'classical languages', however, is fairly clear: The term refers to any language which is no longer effectively used by social groups for oral communication but which is treated as an oral or writen medium of instruction in schools (and often taught as a subject as well).

2.6. 'Bilingual Education'

The very common term 'bilingual education' also has to be put between quotation marks, for the same reasons as the popular language-type labels have had to be in the first five sections of this chapter. The central meanings (not the definitions) of the labels used popularly and officially to characterize different types of media of instruction can be summarized as follows:

1) 'Mother tongue' often refers to the oral language/dialect presumed to be used in the home of a particular child, or a particular group of school children, but has many other meanings.
2) 'First language' often refers to a standard national language which is also the majority language of the country concerned; but the children in a given class or school do not necessarily speak it natively.
3) The meaning of 'second language' nearly always depends on the prior identification of the 'first language', but the label frequently refers to a standard language (quite often an international one) which is studied in schools as a prospective medium of instruction or a means of wider communication.
4) 'Foreign language', in the typical case, refers to a language not considered by those in authority to be indigenous to the country concerned, but somehow important for students to learn.
5) 'Classical language' usually means a dead language still used as an oral or written medium, or taught as a subject in schools.

All of the above terms overlap in meaning -- even 5) and 1) -- and none carry a clear distinction between the oral and written channels of media use. All of the language media types are sometimes taught as subjects in their own right, and may form part of the school's language curriculum as well as serving as media for its general curriculum. It remains now to see what *combinations* of these language types are found in schools and school systems around the world, and to consider what additional terms are used to designate these combinations. In this connection, we find that the five labels listed above are also useful in formulating loose definitions of the popular and official terms which characterize various educational media combinations.

'Monolingual education' typically implies either a single 'mother tongue' or a single 'first language' as the principal medium of instruction. All other language types, if included in the curriculum at all, are relegated to language curriculum as such. In some cases, however, 'monolingual education' takes place through what could be called locally a 'second' or even a 'foreign' language -- for example, in overseas schools for children of Japanese, American, or European expatriates, and in private or religious schools in many countries. Occasionally, the typical monolingual form of education is called 'bilingual', despite the fact that only one medium of instruction is involved -- for example, in voluntary French-medium programs for English-speaking students in Canada, in which cases the French may be either a 'first' or a 'second' language, depending on the province where the programs are undertaken.

The reverse situation is even more common. What is called 'monolingual education' often turns out, on inspection, to involve two or more distinct media of instruction. The most usual case occurs when the 'first language' (or even the 'mother tongue') is in fact a language variety unfamiliar to most of the pupils in the class or school. If the pupils share a common home language, and if the teacher is in control of this other language variety, a great deal of the actual instruction may take place in the non-school variety, which in effect becomes an unofficial medium of instruction that regularly supplements the official one. In Kampuchea (the Khmer Republic) in the 1950's and 60's, for example, when the official school medium was French in upper primary and secondary schools, the French medium was often supplemented by Khmer, the language best known to the majority of students. Even in language instruction itself, where the medium of instruction is supposed to be the language studied, teachers all over the world customarily use other language media to translate vocabulary items or whole sentences, to explain grammar to students, and so forth.

The term 'bilingual education', on the other hand, typically implies some instruction in both 'first' and 'second' languages. Very seldom is there equal emphasis or time spent on each of the two media, however. One may be dominant in early education, to be eclipsed later by the other; this is the usual pattern, for example, in Indonesian schools. Quite often the two language media are distributed according to subject areas in the general curriculum -- for example, in the Philippines, mathematics and science are to be taught in English and all other subjects in Filipino. In still other cases, the two media alternate in the same subjects -- for example, oral instruction in a 'mother tongue' or 'first language' coupled with textbooks and reference materials in a 'second' or 'foreign' language; or the choice of media may even be left to the teacher's discretion.

Even since the term achieved popularity a decade or so ago, many different combinations of school and community media as well as many different combinations of language and general curricula have been lumped together under the heading of 'bilingual education'. Even school systems which are essentially monolingual have applied the term to themselves -- for example, students in Singapore who are taught general subjects in one language are required to study a different language as a subject, and this too is called 'bilingual education'. Rather than try to sort out all the separate models here, we will treat the classification of bilingual education separately in Chapter 4 (4.2.).

Finally, 'multilingual education' is rarely heard as an actual descriptive term, but the corresponding practice in individual schools, and even in school systems, is nonetheless fairly frequent. It involves instruction in three or more media types (as loosely defined in this chapter, but see also Chapter 4). Inasmuch as real multilingual education, where it occurs, is usually called 'bilingual education' and so is some monolingual education, the term 'bilingual education' has become as meaningless as the language labels used by schools to characterize their media of instruction and their language curricula.

In the last two sections of this chapter, we will examine how the prescriptive view of language, held by many educators as well as by parents, students, and the general population, together with the natural process of language standardization, contributes to the confusion regarding terminology, but at the same time holds out some hope of clarifying some of the confusion.

2.7. The prescriptive view

The language typology of education which has been discussed and exemplified so far reflects a linguistic orientation which is probably as old as education itself. In very simple terms, this view holds that what ought to be taught in schools and used as the medium of instruction is the *ideal* version of a given language, not the actual forms of the language which people speak and write. If the school is the arbiter and disseminator of correct moral and intellectual precepts, why should it not also judge and disseminate correct linguistic precepts as well? To many teachers and educators, the term 'grammar' already implies something along these lines, because 'grammar' to them means a set of rules and appropriate vocabulary choices which, when applied properly, will invariably yield a 'correct' expression of some notion in some standard language. It is not surprising, therefore, that primary schools and even schools at a higher level have been called 'grammar schools'. The fact that the teachers themselves, and the developers of school curriculum, do not necessarily know what the rules and choices of 'grammar' are is not considered a legitimate argument against this ideal concept.

In the next chapter, we will see that most present-day theories of linguistics and of related disciplines do not share this concept of grammar. Briefly, they share the quite different view that speech varieties are of primary importance in linguistic analysis, and that these speech varieties are comparable to natural phenomena in the sense that they exist in the real (not the ideal) world. They can be observed, classified, and explained, but it is not within the province of the descriptive grammarian to change or influence their development. More importantly, perhaps, modern theories recognize that the spoken, and even the written, forms of languages are in a constant state of flux, and that to describe linguistic phenomena as if they were frozen in time is merely a conventional procedure, not implying that language varieties themselves are in any way static.

Data on speech varieties are collected by the best available means -- from living speakers wherever possible, but otherwise by interpretation of reliable written sources. These data are classified, arranged, and selected for synchronic or diachronic comparison, and they may also be examined for universal characteristics. But the data must always represent (at least in theory) the *actual usage* of speakers and writers of the language variety concerned. They must not represent an idealized version of what usage might be if people always spoke and wrote with maximum precision, economy, and directness, confining themselves to the expression of propositional content which is always subject to external verification.

There is, however, another kind of grammar, of interest to applied if not to theoretical linguists, which *does* try to represent such an idealized version of language. This is *prescriptive grammar*. It resembles descriptive grammar in terms of subject matter, but not in terms of aims and procedures. In very simple terms, the aim of prescriptive grammar is to specify, for a particular language variety, the vocabulary and the grammatical rules which will yield the best possible expression of all the notions (i.e. propositions) which are to be expressed in that variety (which is usually called a language rather than a dialect). In other words, the ideal rather than the actual forms of the language are the concern of the prescriptive grammarian.

Since any language with a rigid and prescribed form does not permit internal variation, moreover, the problem of identification of the medium of instruction in a given instructional sequence is automatically solved: the medium is whatever it is supposed to be. All deviations from its ideal form by students are merely mistakes, and any deviation by a teacher is evidence that the teacher is unqualified to teach in that medium. The problem of the relation of the oral-and written-channel manifestations of the medium is also solved: The prescribed form of the oral version of the language can be made to fit the prescribed written version exactly, through detailed rules of pronunciation, punctuation, and spelling.

When it comes to applications of linguistics to typical development problems, and especially to the concerns of education, the prescriptive view of grammar is likely to have a much greater appeal to the layman than any other view of grammar has. Educational planners and administrators, for example, would usually prefer to specify the media of instruction in their schools in much more exact terms than modern linguistic, psycholinguistic, and sociolinguistic theories will permit. The same preference would naturally extend also to subjects in language curriculum. Language teachers, likewise, are eager for 'authorities' to cite in defense of their preferences for particular language forms; a true linguistic description of the speech variety concerned may not give the teacher much comfort and support, and often suggests more latitude in usage than the teacher would like to permit his students. For the written language, especially, strict rules of vocabulary and grammatical usage are desirable from the point of view of administrators, curriculum developers, examiners, and teachers of all subjects, as well as for teachers of language subjects.

The greatest applicability of prescriptive grammar, therefore, occurs in two areas which are central to all the themes of this book: *language standardization* and *language form planning*. The first term applies to nearly all living speech varieties and their written versions which are used in education and communication all over the world. The second term applies only to those language types which are felt to have deficiencies in vocabulary, grammar, or discourse. *Language form planning* (or language corpus planning, as it is called in some of the literature) always implies the perception of a need for further development or improvement of the language variety concerned.

This need for development usually arises from new domains or functions which the languages were not previously required to serve. For example, 'first' and 'second' languages in many developing countries are replacing 'foreign' languages in the fields of internal administration, mass communications, science and technology, and all kinds of economic and social development. It is often felt that the indigenous languages are unequal to these tasks and cannot become functional rapidly enough through natural development. Therefore they, and especially their vocabulary and terminology, must be consciously 'developed' or planned and this always presumes applications of prescriptive grammar of one kind or another.

Language form planning is itself such a vast field that it cannot be adequately treated within this chapter, or even within this book (but see Section 12.8.). *Language standardization*, although it may utilize inputs from prescriptive grammar also, is quite a different matter, and becomes the subject of the last section of this chapter.

2.8. **Language standardization**

In the context of education, and especially with reference to the written media, standardization is unavoidable and necessary. It can almost be said, in fact, that languages which have been used for a long time in education and in which stockpiles of reference materials have accumulated tend to standardize themselves, without much assistance from language planners. There are good reasons why the cumbersome, illogical writing systems of English and Chinese, for example, are so difficult to change, although many reformers have sought (and continue to seek) ways of changing them. If the English graphic system had not been standardized very early in the history of its development, much of the literature in libraries would be inaccessible to modern English readers without special training. In the case of written Chinese, recent successes in the (prescriptive) simplification of the character system have been made to work by a powerful, centralized government, but only in the full awareness of the price to be paid in terms of literature lost to modern students. Even the Chinese and Soviet governments have not gone so far as to romanize their standard writing systems (except for the express purpose of transliteration), in spite of the obvious advantages to be gained in terms of modern communications technology.

Besides being prescribed by governments or other powerful authorities, the form of standardization of orthography and vocabulary can be arrived at through convention, or through informal agreement among the parties concerned. Although there are still slight differences in pronunciation, spelling, vocabulary, and grammar between British and American English, for example, there are far fewer differences than there might be if the mass media and private publication output of the two countries were not shared. Writers and broadcasters do not have to be told to make adjustments to please customers across the oceans; they know that the size of their market depends in part on such adjustments. The conventions on standardization of a common language may also be arrived at through formal agreements, as in the case of the national languages of Malaysia and Indonesia -- a series of intergovernmental meetings, beginning in 1973, has resulted in agreements not only on a common orthography but also on certain lexical and morphological matters.

Convention, as a standardization influence, may be quite independent of prescriptive considerations. This is especially true of closely related speech varieties. In the oral channels of major media, the standardizing influence extends not only to vocabulary but also to features of morphology and syntax, and even to features of pronunciation (the oral equivalent of orthography). Typical language communities and speech communities (see 3.3.) have within them *centers of attraction* -- dialects which through their greater prestige attract speakers of other dialects toward them like a giant magnet. The French of Paris, the Italian of Rome, the Mandarin Chinese of Beijing (Peking), and Southern British English (also known, in some of its aspects, as 'Oxford English' and 'Received Pronunciation') are all undoubtedly such magnets. Within a speech community, strong centers of attraction eventually become *standard spoken languages* (French, Italian, Mandarin); within a language community they become *standard dialects* (Southern British and Midwestern American English) to which speakers of other dialects are steadily attracted. Some speakers respond to this attraction either by modifying their own speech in the direction of the prestige variety (the standard language or dialect) or by attempting to imitate it exactly; other speakers successfully resist the attraction, but it is always a factor that helps to determine the development of the outlying dialects.

Many aspects of language standardization, of course, are also found in language planning, but the essential difference is this: Language *form* planning is always partly prescriptive, while language standardization need not be. There are natural and social processes which encourage standardization, as we have seen. These processes eventually lead toward the total disappearance of dialects too far away from the centers of attraction, and even of whole languages too far away from more powerful members of the same language family. If this were not so, modern linguists and grammarians would have to contend with many more speech varieties than they are actually confronted with. Unimportant speech varieties of the past seldom show up in written records; those of the present tend to lose speakers to their more important neighbors and play less and less of a role in domains like education. It is not surprising, therefore, that the main interest of prescriptive grammarians lies in important standard-language varieties.

Education itself is a strong force for standardization. Like the mass communications media, the educational media operate within time, space, and cost constraints which limit the number of options for media variation. Language and general curricula of schools, if not the actual media of language and general instruction, tend to iron out variation even at the lowest levels of education. As has already been pointed out, students at the higher levels of education have very little chance of success unless they are in control of the written channels of at least one standardized medium, because the necessary self-instructional and reference materials are less available in non-standardized media. In countries where schools give instruction to high percentages of the population over long periods (and this includes countries like Japan as well as countries of Europe and North America), the force of standardization becomes the strongest. This holds true whether or not the form of standardization has actually been prescribed by some central authority (as in the case of France).

But sometimes the natural process of language standardization does not take effect fast enough, and critical problems can be raised, especially for language teachers, examiners, and educators. The fact is that language standardization is *absolutely necessary* in order to state the goals and content of any language curriculum. This is because the tests and examinations which define language curriculum always *imply a standard.* Even in a 'communicative' approach to language testing, in which criteria are based on the examinee's ability to interpret texts, create texts, and participate effectively in text creation, it is obviously necessary for the examiner to define the text media as well as the channels concerned; otherwise the examinee can respond or participate in any medium or channel whatsoever and reasonably expect his judges to be able to evaluate his performance on its communicative merits alone. The typical failure to realize that language standardization is prerequisite to defining language curriculum is partly the result of a confusion between language and general curriculum goals, and partly the result of a misreading of the relation between language instruction and language curriculum. This confusion is made worse by the popular terminology discussed earlier in this chapter; undefined terms such as 'mother tongue' and 'bilingual education' do nothing to clarify matters.

Finally, we return to our original problem: the classification of instructional media (and language subjects) and the measurement of distances between them. Here prescriptive grammar, along with natural standardization, gives us what seems to be an almost perfect solution to the problem. For written languages, we could accept the decision of the nation(s) or social group(s) concerned as to what is a language and what is not. In this type of definition, such important entities as modern written English, French, Spanish, Italian, Russian, German, Dutch, Japanese, and perhaps Hindi and Swahili would qualify as language (and they would probably fit most linguistic definitions of *a language* as well). Such important entities as 'Chinese' and 'Arabic' would also qualify as single languages, in spite of the fact that few linguistic definitions would classify them so. That is, Chinese and Arabic would be languages because the people who speak and write them think they ought to be (or, more accurately, because the people in charge of the schools where these varieties are used think they ought to be considered single languages).

For modern spoken languages, the solution is more difficult, but not impossible in terms of prescription and standardization. First, we could determine whether there is a single (prescribed or otherwise standard) oral version of a given written language as defined in the preceding paragraph. If so, this version could be designated as *Standard* plus the written-language designation: Standard Italian, Standard Japanese, Standard Russian, and so forth. If more than one oral version was found to be 'standard' for a given written language, we could insert an adjective to distinguish each separate variety: Standard British English, Standard High German, Standard Castilian Spanish, and so forth. This device could also be employed for cases like Arabic and Chinese (with a different linguistic implication): Standard Moroccan Arabic, Standard Hokkien Chinese, etc. All dialects *not* considered 'standard', then, could be designated simply by their names: Southern American English, Canadian French, Bazaar Malay, etc.

For older written languages, the traditional designators could simply be retained. Most dead languages have, in fact, reached a state of complete and irreversible standardization -- in the sense that nobody can change them any more and get away with it. 'Classical' languages with no modern descendants bearing the same name are no problem: for example, Sanskrit, Latin, and Avestan. In cases where there is a modern written language with the same designation, we could borrow the terminology of historical grammar and insert adjectives like 'classical', 'Old', or 'Middle' to distinguish the dead varieties: for example, Classical Greek, Old Norse, and Middle English, and so forth.

Thus the prescriptive view of language, together with the natural process of language standardization, is of value in attempting to characterize, define, and designate the language varieties that occur as media of instruction in general curriculum and as subjects in language curriculum. As we shall see in the next chapter, however, the prescriptive view of language does not get much support from the discipline of linguistics or from the disciplines most closely allied with it, and prescriptive grammar is always in practical as well as theoretical conflict with the corresponding descriptive grammar of the language variety concerned.

CHAPTER 3

LANGUAGE VARIATION

3.1. The comparative method
3.2. Historical perspectives
3.3. Descriptive grammar
3.4. The sociolinguistic view
3.5. Universal grammar
3.6. The psycholinguistic view
3.7. Channel distance
3.8. Language variety distance

In the first two chapters much has been said about variation in language and about language 'varieties' and 'types'. On the other hand, terms such as 'a language', 'a dialect', 'colloquial language', and 'standard language' have been avoided as much as possible. The reason for this is that these designations, like the popular terms of Chapter 2, have vague central meanings but strong connotations for the average person. Not only that, the popular usage of terms like 'a language' and 'a dialect' differs so much from usage in the technical literature of linguistics that any term more precise than 'language variety' would have been bound to mislead at least some of the readers of this book unless it was explicitly defined.

An earlier definition of such terms could have have been given in Chapter 1, along with other definitions of key terms, but this was not attempted because the overall topic of the medium and channels of instruction in schools would not allow for meaningful definitions until such distinctions as those of channels, texts, and text media had been firmly made. Another reason for postponing the definition of media-related terms designating particular varieties of language is that the definitions themselves are difficult to understand without some prior discussion of certain basic concepts in linguistics.

Besides prescriptive grammar (2.7.), there are four subdivisions of grammar in the linguistic sense which all have some relevance to the identification of particular language varieties in their spoken and written forms. In addition, there are two hybrid disciplines associated with linguistics which have contributions to make with regard to the identification problem. The six categories are as follows:

1) Comparative grammar
2) Historical grammar
3) Descriptive grammar
4) Sociolinguistics
5) Universal grammar
6) Psycholinguistics

This chapter will discuss the problems of language variation, type designation, and standardization from the point of view of each of these sub-disciplines in turn. The actual definitions of language types are deferred until the beginning of Chapter 4, but the language 'distances' relevant to students and schools are identified in the last two sections of the present chapter. (Readers not particularly interested in linguistic theory are advised to skip from this point to Section 3.7).

3.1. The comparative method

The common ground in all classifications of language varieties is an attempt to measure, or at least to give a rough indication of, the distance between any two given speech varieties. We begin with the approach of comparative grammar to the problem of language micro-classification, because in many ways the comparative method is the simplest and most systematic approach of all. To be sure, the results of classification along comparative lines are not particularly useful to a study of the media of instruction in schools, but an understanding of the comparative method itself will help to shed light on other efforts to measure distances between languages and dialects.

The comparative method starts with an assumption (originally called the 'Neogrammarian Hypothesis') that the sounds of spoken language change over time in an absolutely regular and systematic way. That is to say, we can ignore the specific meanings of pairs or sets of language forms in different co-existing speech varieties as long as we can show that the pairs or sets of forms have a single common origin in some 'parent' speech variety -- that is, that they were the 'same word' in this ancestor language. One of the criteria for accepting a common origin for any set of forms, of course, is that the meanings of these forms must have *something* in common. Thus we would not compare the word for 'sheep' in one language with the word for 'illuminate' in another unless, for example, we knew or suspected that sheep-tallow was used to make candles in the original culture, or something of that sort.

The emphasis of the comparative method is therefore on the *forms* (phonology) of speech varieties and not on the *meanings* of the forms (semantics). The basic assumption of systematic sound change implies that, although both language forms and language meanings obviously change over time, only the forms do so in rule-governed fashion. Hence any measure of the distance between languages and dialects must be based on phonological rules, or 'sound laws', rather than on unpredictable shifts in meaning (or complete loss) of particular vocabulary items. One starts by comparing pairs or sets of words which resemble each other closely in *both* form and meaning, in speech varieties which are obviously related to each other.

For example, the modern French and Italian words for 'dog' -- *chien* and *cane* respectively -- suggest a rule whereby the French sound /š/ corresponds to the Italian sound /k/. The words for 'hundred', French *cent* and Italian *cento*, suggest another rule whereby French /s/ corresponds to Italian /č/. We can check these suspected correspondences of sound by comparing hundreds of other pairs of French and Italian words having the same or similar meanings. If we do so, we will find that these specific rules generally apply. But we will also find plenty of cases where Italian /k/ corresponds to French /k/ rather than to /š/, as in the words for 'heart' -- *cuore* and *coeur* -- and plenty of cases where French /s/ corresponds to Italian /s/ instead of /č/, as in the words for 'seven'-- *sept* and *sette*.

We can set up new rules to cover these new correspondences, but two questions are immediately raised: 1) If sound change is regular, how can Italian /k/ correspond to both French /š/ and French /k/, and how can French /s/ correspond to both Italian /č/ and Italian /s/? 2) What were the original sounds in the parent language from which these co-existing pairs of variant sounds developed -- that is, what did the original words 'sound like'?

In the case of Italian and French (and the other Romance languages such as Spanish, Portuguese, and Rumanian) we are in luck, because we have written records of several varieties of the presumed parent language: Latin. We don't know what Latin really 'sounded like' (because the Romans failed to leave us any tape recordings), but we can make informed guesses from all kinds of evidence, including Latin spellings of various periods, and give a partial answer to the second question in this way. The Latin forms giving rise to our examples are:

canis	'dog'	cor	'heart'
centum	'hundred'	septem	'seven'

While we don't know exactly how the Romans 'pronounced' the *c* in the first three words above, we can hazard a guess that they considered them to begin with the 'same' sound, and also that they considered the *s* in *septem* to be a 'different' sound. Noticing the different vowels which come after the Latin initial *c-* will then help us to reformulate our rules, as follows:

Latin	French	Italian
ca - (canis)	/š/ (chien)	/k/ (cane)
ce - (centum)	/s/ (cent)	/č/ (cento)
co - (cor)	/k/ (coeur)	/k/ (cuore)
s - (septem)	/s/ (sept)	/s/ (sette)

If the reformulated rules hold up (and they do, in general), we will have answered the first question as well: The sound changes are now perfectly regular if we look at the whole phonetic context -- that is, in the case of Latin c, we look not just at the consonant but also at the vowel which immediately follows it. This procedure will ultimately result in the discovery of sets of words which are related, but for which the 'ancestor' word is not what we might have expected, in terms of its meaning, or is completely lacking in Latin texts of all periods. Such is the case with the Romance language words for 'horse'. The Classical Latin word for 'horse' is *equus*, but in most modern descendants of Latin it is something like French *cheval* and Italian *cavallo*. From the correspondences we can reconstruct a Latin form *caballus-* -- which in fact we later find attested (as a specific *kind* of horse: *equus caballus*).

Once we have established *all* the rules of correspondence, or sound laws, for the modern languages descended from the same source as Latin (actually, and more directly, from a popular variety of Latin, and not from the Latin recorded in the writings of Cicero and Virgil), we can then begin to look for pairs of words to which the sound laws apply but whose relationship we might never have suspected, because of a difference in meaning. Thus we find, for example, that French *chance* and Italian *cadenza* are related, although in the modern languages one means 'luck' and the other 'cadence'. (Both are derived ultimately from a Latin verb meaning 'to fall'.)

On the other hand, we may have to 'explain away' pairs of words in Romance languages which have the same meaning but apparently do not obey the sound laws which we have set up. For example, the Italian equivalent of French *chat* 'cat' is not **catto* but *gatto* . There are three basic ways to account for such apparent inconsistencies:

a) to trace the change to borrowing from another language or dialect;
b) to posit or show language or dialect; and
c) to refine further the rules of sound correspondence so as to account for a previously unnoticed deviation.

It always turns out that one of these three kinds of explanation' will be at least plausible with regard to any form that is irregular in terms of sound correspondences. Otherwise, comparative grammarians would long ago have rejected their basic assumption of the regularity of sound laws.

For the Romance languages, and for other groups of obviously related modern speech varieties, we have written records of some stage of an earlier parent language (e.g. Latin) to turn to for confirmation or correction of the results of the comparative method as applied to the forms of modern languages. But what about groups of obviously related speech varieties for which there are no comparable written records of the parent language? Such a group is exemplified by what is called the *Germanic* (or, in the older literature, the 'Teutonic') language family. Records of older Germanic languages do exist (for example, Old Norse, Anglo-Saxon, Old High German, Gothic), but they are not of the same level of 'parentage' as Latin, Sanskrit, and Greek are with respect to other groups of modern languages.

Yet by using the modern languages and what records we do have of the older languages of the Germanic family, we can still reconstruct a parent language or 'Proto-Germanic' which will be entirely parallel to, and comparable with, the 'proto-Romance' parent language which is partially confirmed by Latin records. Ultimately, this reconstruction will account for correspondences such as Roman **k* = Germanic **h*, Romance **s* = Germanic **s*, etc. as illustrated by the following examples (of pairs of words which are of different historical levels and therefore not directly comparable without reference to prior reconstruction):

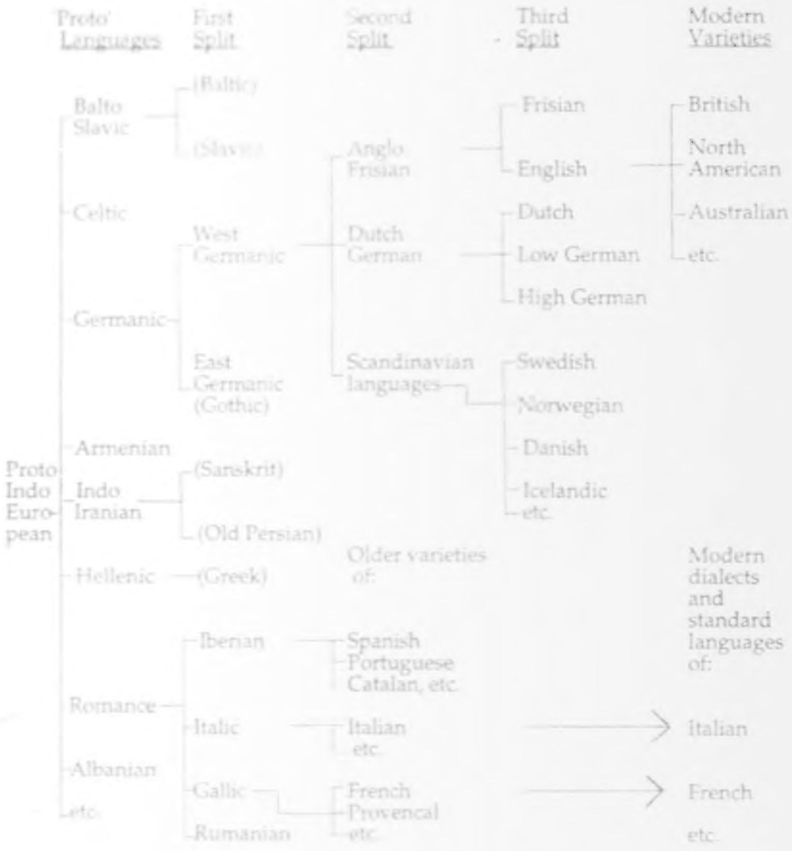
	Latin (Romance)		English (Germanic)
*k	canis	*h	hound
	centum		hundred
	cor (cordis)		heart
*s	septem	*s	seven

Note that if we had only Modern English and Classical Latin to compare with each other, as the above examples seem to imply we are doing, we could never have worked out the correspondences accurately. In fact, the hypothesis about correspondences between Proto-Romance and Proto-Germanic itself implies an even deeper level of reconstruction -- one for which we have no confirmation at all in any written records. This deeper level is called 'Proto-Indo-European' (older 'Proto-Aryan'), and it has been exhaustively reconstructed by scholars using the comparative method.

Thus comparative grammar always requires at least one pair or set of contemporaneous speech varieties which are available for direct comparison. These may be living speech varieties, older speech varieties attested only through written records, or (as in the case of Proto-Germanic) reconstructed speech varieties themselves. Each level of comparison of two or more speech varieties which are actually or theoretically co-existing varieties yields a unique set of correspondences. Each of these sets of sound correspondences, in turn, reflects a presumed earlier 'parent' speech variety which becomes available for comparison with its own contemporaries, and so on.

One type of schematic representation of the results obtained by the comparative method, in terms of language classification, is the so-called 'tree diagram'. Following is a truncated and somewhat over-simplified diagram of the Indo-European family 'tree' from which all of the examples given so far in this chapter have come. (The tree is shown horizontally rather than vertically for the sake of convenience.)

'TREE DIAGRAM' OF THE INDO-EUROPEAN FAMILY OF LANGUAGES


'Proto' Languages
First Split
Second Split
Third Split
Modern Varieties
Proto Indo European
Balto Slavic
(Baltic)
(Slavic)
Celtic
Germanic
West Germanic
East Germanic (Gothic)
Anglo Frisian
Frisian
English
British
North American
Australian
etc.
Dutch German
Dutch
Low German
High German
Scandinavian languages
Swedish
Norwegian
Danish
Icelandic
etc.
Armenian
Indo Iranian
(Sanskrit)
(Old Persian)
Hellenic
(Greek)
Older varieties of:
Modern dialects and standard languages of:
Romance
Iberian
Spanish
Portuguese
Catalan, etc.
Italic
Italian
etc.
Italian
Gallic
French
Provencal
etc.
French
Rumanian
etc.
Albanian
etc.

Tree diagrams of 'family' relationships among speech varieties, such as the one shown above, are not to be taken literally as true representations of historical facts. But they do provide a ready-made way of measuring *distances* between related speech varieties. If desired, we can assign labels to the various levels such as phylum, family, sub-family, language group, language, dialect group, dialect, and so forth. But such nomenclature is not necessary for the purpose of measuring distances between contemporary speech varieties, either modern ones or ancient ones. All we have to do is count the *nodes*, or places where the branches of the tree come together, which must be passed through in order to get from one variety to another.

For example, in the diagram of the Indo-European family tree shown above, American and British English are found under the same node. If the diagram is reliable, this means that the distance between them is only 'one node', in comparative terms. On the other hand, in order to get from 'English' to 'High German' we have to pass through three nodes, and to get from any modern variety of English to any modern variety of French we have to go all the way back to the Proto-Indo-European tree trunk itself -- implying a much greater distance. Thus the comparative method, and the tree diagrams which result from its application, provide one means of measuring language distance. The validity of measuring distances this way is open to question, as we shall see later, but the reliability of the measure depends only on the reliability of the language data at various historical levels and the accuracy of the sound laws derived from the data.

3.2. Historical perspectives

The comparative method also gives us one kind of historical perspective on modern speech varieties. Taking any form or group of forms from a given variety spoken somewhere in the world today, we can trace the form(s) back in history as far as our completed levels of reconstruction will allow us. More than that, an account can be given of how borrowing, analogical new-formation, and semantic shifts have replaced or altered forms which *ought* to have been inherited (according to strict applications of sound laws) or how new words have been added to the lexicon of the modern speech variety in question.

Etymology, in other words, becomes a more or less scientific undertaking. We can no longer say, for example, that German *Kopf* and Latin *caput* are related just because they look and sound somewhat alike and both happen to mean 'head'. As a matter of fact, the relevant sound correspondences show that *Kopf* and *caput* are completely unrelated, and also show that English *head* can be related to the Latin word but not to the German one. English *head*, in fact, corresponds not only to Latin *caput* but also to French *chef* and Italian *capo* (through the Old English *heofod*). The French and Italian words, however, have the principal modern meaning of 'chief' -- the words for 'head' in these languages, French *tete* and Italian *testa*, derive from the Latin *testa* meaning 'pot'. We now can some full circle by observing that German *Kopf* 'head' is most closely related to English *cup* -- also a household utensil with a certain characteristic shape. Thus what was originally 'slang' in French, Italian, and German has come to be standard vocabulary over time; of the languages mentioned here, only English has retained the inherited word for 'head' in its original meaning.

A true picture of the chief-head-pot-cup relationship described above would never have been possible without the comparative method and its assumption of regular sound change. Without it, the comparativist would still be wallowing in contradictory intuitions and ad-hoc etymologies, and the historian of language would be in a similar fix. On a broader scale, we can no longer say that English *mama* and scores of other similar-sounding words in various languages meaning 'mother' are related unless we can first establish that the speech varieties in question are *genetically* related to English -- that is, that they are descendants of the same proto-language at some stage of their histories. Even after the genetic relationship has been established, we must still show that the forms in question follow all the relevant rules of sound correspondence at each level of descent toward the modern language or dialect.

The way of measuring distances between speech varieties that the comparative method provides may be supplemented and further quantified in historical terms by techniques called *glottochronology* and *lexicostatistics*. These techniques can be applied, moreover, to languages only suspected to be related as well as to those known to be related through application of the strict comparative method. By examining percentages of vocabulary lost or replaced during various stages of the development of certain languages whose histories are known, glottochronologists claim to be able to assign approximate time-periods to the abstract distances between nodes of a typical tree diagram. This in turn makes possible the assignment of approximate dates for the splitting-up of two or more speech varieties of which the histories are unknown and for which no earlier written records exist. The assumption that sound change is regular is retained, and a new assumption is added: that the rates of vocabulary attrition are also regular.

Thus, to use our earlier examples, we might say that American and British English are about 400 years apart, if it is true that these varieties began to split about the time of Shakespeare. Modern English and Modern High German must be about three times that far apart. English and French (after we have eliminated the loan-words like 'chef' in English and 'smoking' in French) must be well over three thousand years apart, and so on. These particular distances expressed in terms of time can be partly verified, of course, from historical records, but other such time-distances can be calculated for groups of dialects and languages of which the history is much more obscure. In some cases, and especially when geographical features such as oceans and mountain ranges have kept the relevant populations apart for centuries, the findings of glottochronologists have later been substantiated by archeological or demographic evidence of various kinds. (In other cases, however, the findings cannot be confirmed at all and are considered highly suspect by researchers in other fields.)

The comparative method, with or without the additional perspectives provided by glottochronology and lexicostatistics, has certain obvious biases as well as certain advantages. The main bias is that the sounds of individual words form the real basis of comparison of speech varieties. Other aspects of grammar, such as syntax, morphology and semantics, receive little more than lip-service from comparative grammarians. They pay attention to such features in looking for speech varieties to compare, but largely ignore them in formulating the results of the comparison. Historical grammarians pay attention to all aspects of grammar in the course of tracing the development of particular speech varieties, but they still base their important decisions, like the comparativist, on phonology and lexis.

To some extent, historical grammar and the comparative method, for all their emphasis on spoken language and sound laws, also suffer from a *graphic* bias. Because of the reliance on written records for confirmation of basic hypotheses, only those aspects of sound which are normally committed to paper are really considered. In compiling his word-lists, for example, the comparativist or lexicostatistician has to pay close attention to vowels, consonants, and syllabic features such as tone or voice-quality, and to features of word-stress or word-accent. Other phonological features such as intonation, rhythm, and sentence-stress usually receive short shrift from the comparativist or the field linguist who is interested primarily in genetic and historical relationships, because his samples are likely to be single words rather than whole utterances. Yet phonological features of whole utterances are important communicative devices in all known speech varieties.

The advantages of comparative/historical grammars, however, are quite considerable. These include:

1) Rigorous procedure, not unlike that of the natural sciences, becomes possible with the assumption of regular sound-change (and the assumption of regular rates of vocabulary attrition).
2) Borrowed elements, dialect mixture, and irregular forms of a particular speech variety become easy to identify and trace historically.
3) Only important languages and dialects, as opposed to transitory ones, tend to be treated seriously, because of the built-in historical perspective of the comparative method and its use of written records as corroboratory evidence.
4) Contributions to other disciplines, such as archeology, history, and lexicography, are both possible and respectable.

5) For the purpose of classifying co-existing languages and dialects, the comparative method at least provides a standard for measuring the degree of distance between speech varieties which is independent of social, political, and psychological variables in the use of the varieties concerned.
6) For the purpose of making diachronic comparisons, between older and newer versions of the 'same' language, historical grammar provides reliable criteria.

Finally, there is no known instance of two mutually intelligible speech varieties being unrelated in the comparative/historical sense, but the reverse examples are plentiful (for example, English and German). Thus the last two advantages mentioned above, 5) and 6), mean that the comparative and historical criteria of language/dialect distance can be used to check on the reliability and validity of other methods of measurement, or can serve as further refinements of these other measures of language distance.

3.3. Descriptive grammar

The aim of descriptive grammar is simply to state all the relevant facts about a pre-identified speech variety. Since every speech variety, however defined, involves a system, the facts about it that are relevant will include rules connecting items of form to items of meaning as well as the items themselves. Although there are many different models for describing language and speech varieties, all of them seek in one way or another to link the sounds of language to the meanings that these sounds convey.

Whereas the comparative grammarian is primarily interested in the relationships among co-existing speech varieties as a source of information for reconstructing still deeper genetic relationships, and the historical grammarian is interested in the specific changes over time that have resulted in a single speech variety (however defined), the descriptive grammarian is, in theory at least, interested only in one speech variety at one particular time. The descriptivist cannot use historical definitions of the speech variety he is attempting to describe, but must somehow locate his subject matter in a certain time-span without reference to what happened before or to what may happen later; the shorter the time-span, the more useful his findings will be to other researchers. The descriptivist must also locate his subject matter somehow in space. He cannot use a comparison with other co-existing speech varieties to define his subject matter, because his data must have been elicited and analyzed before such comparisons become possible. In fact, the descriptive grammarian's analyses of living (and dead) speech varieties provide much of the basis for comparative and historical grammars.

The subject matter of descriptive grammar overlaps with that of prescriptive grammar (see 2.7.), but its aims are quite different. The descriptive grammarian has only two fundamental choices for defining his subject matter: a) he can define the population that uses the speech variety in linguistic terms. In the first case, he must accept all the data provided by his population during the given time-period, and attempt to account for it. In the second case, he can accept only such data as fit his pre-conceived linguistic definition of the speech variety-- this definition being framed in terms of phonology, morphology, lexis, syntax, or some combination of these elements-- and he must accept such data regardless of who produces the actual utterances. Both methods of definition are somewhat unsatisfactory, as we shall see later, but the second one more obviously so. If the linguistic definition of the speech variety is too detailed, it becomes circular; if it is not detailed enough, it tends to admit data which the descriptivist would rather exclude as not being typical.

One way out of this dilemma which has been seen as attractive by many descriptive grammarians is to try to combine the two types of definition, somewhat as follows: 'Let's define a population, but admit from the start that no two people speak exactly the same way. Let's call the speech of any member of the population (at a given time) his *idiolect*. Then we'll find out which people in the population can communicate with each other readily, understanding each other's idiolects without any help from outside. By examining all the idiolects that are mutually intelligible, though not exactly the same, we can abstract all their common linguistic features and ignore all features that show differences-- this common stock of linguistic features we can then *a language*. We can reserve the term *a dialect* for groups of idiolects within the language which share common features over and above the defining features of the language.

Following this approach, the task of the descriptive grammarian logically becomes the description of various *languages* so defined-- that is, as collocations of linguistic features which make the idiolects of a given population mutually intelligible during a certain time-period. The description of *dialects*, likewise, will include other features (mainly distinctive sound patterns, but occasionally syntactic, lexical, and semantic patterns as well) which serve to distinguish the various dialects within the total language community.

The idea of *a language community*, as the population from which the data is obtained for the description of a given language as well as of its dialects, is a very attractive one. Whatever is common to all the dialects in the community and makes them mutually intelligible defines the language, and whatever makes groups of idiolects differ from each other defines its dialects. The criterion of mutual intelligibility, plus a linguistic theory which provides the machinery for analyzing the systematic, distinctive features of spoken language, is all that is necessary. The descriptive linguists who adopt this solution will usually admit that they don't actually proceed in precisely this way, but they find the solution nevertheless satisfying in a theoretical way.

A prior objection to this kind of definition of *a language* had already been raised, as a matter of fact, by those comparativists who were interested in dialect geography, or the mapping of dialect relationships within a presumed language community. A different kind of language community had already been found to exist, predating the popularity of the concept among descriptivists. This kind of community was at first thought to be peculiar to Europe, during the early part of the present century, but was later found in other parts of the world as well. The phenomenon came to be known as *a speech community*. In the typical speech community, for example the High German-Low German-Dutch area of northwestern Europe, the criterion of mutual intelligibility may apply only to *contiguous* dialects -- that is, each group of dialect speakers within the total community may be able to communicate readily with all its neighbors -- but at the same time it may not apply to dialects at opposite ends of the chain or on the fringes of the community. In the region of our example, this might mean that a Swiss German speaker could not communicate with a Dutch speaker unless one or the other (or both) made considerable adjustments to his own speech variety -- say in the direction of Standard High German. If so, by definition these two speakers would have no common language, despite the fact that they were members of the same speech community, connected by a chain of mutually intelligible dialects extending over a contiguous geographical area.

The existence of the speech community such as the one of the preceding paragraph poses no problem for the comparativist, whose only job is to state the relationships among the dialects and languages concerned. The comparative or historical grammarian does not even have to define 'a language' or 'a dialect' in any kind of social or community sense, unless he finds it useful to do so. But the speech community does pose a real problem for the descriptive grammarian who relies on the mutual intelligibility of *all the idiolects* in the community as his criterion for the definition of the language in question. If he wants to cut the speech community into smaller pieces, so that each piece defines a distinct language community, where does he start and stop cutting? The decision to group certain contiguous dialects together and leave out others can become highly arbitrary, in the typical case.

A way out of this second dilemma seemed at first to have been found by those linguists who came to be called *generative grammarians*, and especially by those who called themselves generative semanticists. This solution was, in effect, to return to the second option for the definition of *a language*: that is, to define the speech varieties to be studied purely in linguistic terms; ignoring the actual populations that speak them. This was to be done by positing a set of syntactic rules operating on a universal semantic base, as input, and yielding various kinds of phonological output (idiolects and dialects). In the long run this generative solution did not work either, for reasons which will be discussed later (in Sections 3.5. and 3.6.).

3.4. **The sociolinguistic view**

In the meantime, sociologists concerned with language were raising different kinds of objections to the notion of the language community, and also to the already troublesome notion of the speech community. The basic argument of the sociologists of language goes like this: 'If an idiolect is really the speech of one individual (as some descriptivists claim) and since we know that individuals, including monolinguals, speak in different ways at different times for different purposes, then which *particular* utterances of individual speakers do we accept as data? Surely you don't mean to include all such utterances, so there must be some criterion of selection. In the case of bilingual speakers, the data will include samples of two or more speech varieties, sometimes occurring in the same sentence. Even monolingual speakers will produce data of different styles and registers, and of different phonological and grammatical characteristics on different occasions. If we are to accept data only from those utterances which fit a preconceived notion of what constitutes 'authentic' or 'well-formed' utterances typical of some speech variety, isn't that circular? How can we then base the definition of a language, even in theory, on *all* the utterances in *all* idiolects? Surely every speech or language community of any size includes speakers of more than one dialect, if not of more than one language'.

This argument of the sociolinguists is not easy to answer. The existence of such phenomena as 'market languages', pidgins, and creoles is not the problem: Such varieties can be described in their own right and defined by the communities that use them to communicate. But bilingualism, diglossia (the use of different codes by the same speaker for different occasions), and 'code-switching' by individual speakers are phenomena much too common to be ignored. Indeed, in some communities they are the rule rather than the exception. The purely linguistic aspects of variation or distance among different speech varieties can be handled only so long as we have a non-linguistic criterion of some kind available to define the varieties. If the populations which use the varieties cannot provide that criterion, what else is there?

The sociolinguists, however, do not hesitate to use the criterion of mutual intelligibility in a way quite different from the way it is used by descriptivists. Within geographically or politically defined areas (regions, nations, islands, valleys, provinces, cities, etc.), they use the criterion to calculate *measures of linguistic diversity* in order to assess the probability of communication taking place between two members chosen at random from populations so defined, or to calculate *indices of communicativity* among socially-defined sub-populations. What makes the varieties 'same' or 'different' is not the concern of the sociolinguist; he is willing to accept the judgment of the linguist on such matters, if he can get it, but he is also willing to accept popular opinion, if he cannot.

The microlinguistic label for a given speech variety which the linguist or the sociologist uses in his questionnaires and interviews will not always, in any case, be a linguistically acceptable one, because the label must above all be meaningful to the respondents or interviewees, who are not linguists or sociologists. There is not much point in asking a farmer whether he speaks the basilect or the mesolect of Swahili, or what dialect of Southern Paiute he speaks, unless such designations are already part of local culture. As for the distinction between 'dialect' and 'language', this is not of much value to the sociolinguist either: To him all co-existing speech varieties are potentially equal in their differentiation, and it is enough that the people who use them consider them to be different or same. The sociologist of language often prefers to use the term *lect* for a given speech variety, regardless of its descriptive, prescriptive, comparative, or historical status. This basic term can be further modified to suit his own (sociological) purposes: *acrolect*, for example, for the form of language with the highest prestige and standing in the community, *mesolect* for the middle level, and *basilect* for the lowest forms of the variety in question. But even these terms do not appear on the questionnaires which the sociologist of language employs in his work.

In spite of their different points of view, the descriptive grammarian and the sociolinguist share an important common ground: their interest in *what is actually happening* in a given community at a given time, not in what ought to be happening, what used to happen, or what is likely to happen in the future. Both are looking for behavior patterns of social groups which can be observed, classified, and related to other kinds of behavior patterns. Both are interested in individual behavior too, but only insofar as case studies and small-group interactions can throw light on themes which can be generalized over whole communities, or insofar as they can illuminate questions of theory and methodology.

The linguist's main concern, in trying to measure distances between speech varieties, is to discern what it is exactly that makes them 'same' or 'different'. The sociolinguist's concern, on the other hand, is how different speech varieties function in social interaction of various kinds -- for example, in conjunction with patterns of non-verbal communication -- and only in that sense is he interested in their relationships with each other. The comparative or historical grammarian, as we have seen, has an even different point of view: He is interested mainly in the intrinsic relationships and *development* of languages and dialects, and only marginally in the populations that use them.

Sociolinguists have developed various taxonomies and classifications for language types in relation to nations and communities and for patterns of diglossia, bilingualism, code-mixing, and code-switching that occur in societies where more than one speech variety plays an important role. As has been pointed out in Chapter 1, however, macro-sociolinguistic considerations which go beyond the school walls are outside the scope of this look. The larger community in which the school is located is of interest only insofar as it is reflected in the school itself, and schools are far less likely to be microcosms of society than people might suppose. Sociolinguistic considerations, of course, *must* be taken into account in describing the role of language in the schooling process (see also Sections 3.6. and 3.7.).

3.5. Universal grammar

There have always been grammarians who make the explicit or implicit assumption that all human languages, despite their obvious diversity on the surface, are reducible to the same basic elements. This is an assumption (or claim) which is quite independent, be it noted, from the assumption (or claim) that all human languages are descended from the same source, in the historical or genetic sense. The second assumption, whereby the Garden of Eden mysteriously became the Tower of Babel, is also older than the Bible itself, but it still has proponents in the twentieth century. As a matter of fact, most historical and comparative grammarians would be genuinely surprised if the second assumption turned out to be correct (although there is no evidence to support it, the possibility cannot be entirely ruled out either); this does not prevent them from being universalists in the first sense. Among the descriptive linguists, there are few who would accept being labelled as 'universalists', but the assumptions made by some generative grammarians and semanticists, for example, do not exclude the possibility that this label would be appropriate.

For the sake of symmetry in our terminology, let us define a *universal grammarian* as a grammarian or linguist who makes the explicit assumption that all human languages have something in common in addition to the obvious physiological constraints imposed on languages by the human speech and hearing organs -- that is, that they have something in common over and above the possible sound configurations through which languages are orally channeled to other human beings. Just as the subject matter of descriptive grammar is one speech variety at one time, of historical grammar one variety at different times, and of comparative grammar different varieties at the same time, so the subject matter of universal grammar becomes all speech varieties at all times.

Our definition has to be cast in terms of the grammarian rather than the grammar, in this case, for the simple reason that nobody so far has succeeded in writing a complete universal grammar. A universal grammarian nevertheless has that kind of ultimate goal in mind, whether or not he hopes to achieve it during his lifetime. The goal of the universalist is to discover, first, what it is that all languages have in common besides a phonetic repertoire (having common articulatory, acoustic, auditory, or psychomotor characteristics); and, second, how these universal features are typically modified to become specific features of different speech varieties, ancient and modern.

Note that the categories of grammar listed so far (3.1. - 3.3.) are mutually exclusive only in terms of subject matter and purposes of research -- not in terms of theoretical considerations or of the field of interest of individual practitioners of grammatical analysis and historical reconstruction. This also applies to the seeker after universal grammar. A historical grammarian should know something about the description of language varieties in a presumed static state, and he usually does. A universalist should know something about the comparative method, and he usually does. Any grammarian should be aware of the difference between prescriptive and descriptive grammar, and a majority of them are -- even those who prefer to practice the prescriptive kind. Many linguists have, in fact, worked in all four branches of grammar, and any given linguistic theory has certain implications for all four branches.

An attempt to construct a theoretical model of the actual process, by which the language user (or speaker/hearer) relates form and meaning as conveyed by any speech variety, is represented in a kind of universal grammar called *generative semantics*. The reasoning behind this model goes something as follows: The *forms* of any language are easily analyzed in terms of their ultimate constituents -- the sounds, or phonetic components, which are the same for all human beings but occur in a bewildering number of permutations and combinations in actual human speech; the *meanings* of any language should be analyzable in much the same way, since all human beings possess the same potential in terms of the neuro-psychological apparatus for acquiring, processing, and storing information obtained from the outside world.

The generative semanticists appear to be convinced that once we have surveyed the entire range of human meanings (past, present, and future), we will be able to break them down into their ultimate, indivisible constituents. There is even a name for these ultimate constituents of meaning: *semantic bits*.

As in the case of the sub-atomic particles of physics, the semanticist has to be able to identify these bits without ever seeing, hearing, or touching them; the only evidence of their existence is the observable behavior of larger constituents which they presumably influence. If one accepts the notion of semantic bits, then any meaning of any surface structure or surface form in any language can then be expressed in terms of them. The task of describing a given speech variety (or rather, of *defining* a given speech variety) then simply becomes the task of stating the possible collocations of semantic bits, the possible collocations of phonetic bits, and the rules by which the speaker/hearer maps the one system onto the other.

If this could be done, of course, the problems of all types of grammar (comparative, historical, descriptive, universal, and possibly even prescriptive grammar) would soon be solved. More than that, the definition of any speech variety, no matter how minimally or maximally distinguished from another speech variety, would be a simple matter, because definition and description would amount to the same thing. The set of specific semantic, syntactic, and phonological rules used by the speaker/hearer in encoding and decoding messages would automatically define the speech variety; any utterance which followed the rules would constitute an example of that speech variety, and any utterance which did not would represent a deviation from it -- a deviation, moreover, which would be measurable in semantic, syntactic, or phonological terms. Similar criteria would be used to define, describe, and measure distances among written language varieties, and so forth.

The population that normally speaks (or spoke) the variety in question would thus be effectively bypassed. Bilingualism, diglossia, code-switching, and the other concerns of the sociolinguist would not be a problem for the grammarian any more. Even changes in the individual speaker/hearer's own patterns of rule application and item selection during his lifetime would not be a problem -- it would merely be a special case of variation. The measurement of distances between language and speech varieties would simply be a matter of comparing sets of rules for similarities and differences. Labels like 'a language' and 'a dialect' could be applied, if need be, to various degrees of difference and similarity. In fact, all of the concerns of comparative and historical grammar, as well as the concerns of descriptive grammar and sociolinguistics, could be handled in terms of this single universal model of language description/definition, once all existing data had been restated in the proper frame of reference.

What is wrong with this highly attractive solution? Apart from the fact that no generative semanticist has yet produced a satisfactory account of even a single speech variety by following this model, the concept of linguistic universality itself is only an assumption -- and one that may well have to be rejected on purely theoretical grounds in the long run. The problem lies in the fact that all natural languages have functions other than the encoding and decoding of logical propositions (the most promising area of universal and generative semantics thus far).

Languages are used to deceive, amuse, persuade, and discourage people, to conceal or distort facts as well as to reveal or inquire about them, to be ambiguous rather than precise, to hint rather than state. Above all, languages are used to express *attitudes* toward other people, toward facts, and even toward the ways in which other people present facts. As the sociologists of language have shown, language is part of social behavior which goes far beyond the mere transmission of information, and any model of linguistic analysis which focuses on information processing cannot account for all of language.

To counteract this objection of the sociolinguists and also of certain philosophers of language, attempts have been made to include these other functions of language in a subcomponent of semantics, or for some universalists a completely separate component, called *pragmatics* (see 5.5. and 8.2.). But the essential problem which universal grammar has to face still remains: Although the rational or 'cognitive' elements of universal semantics can be effectively desocialized, the attitudinal and 'affective' elements are firmly culture-bound. To pursue the analogy with physics further, it is as if the analyst is trying to account for two totally different types of matter in terms of a single, universal set of subatomic particles (the semantic bits). The numbers and types of particles can be extended indefinitely, but if some particles behave only in a socially-defined context and others do not, then it becomes exceedingly difficult to relate them systematically to each other.

To assume a common semantic/pragmatic base for all natural languages, in short, becomes tantamount to assuming a common cultural background for all mankind -- a cultural background, moreover, which must hold for antiquity and the future as well as for the present, unless provision is made for loss, change, and new-creation of semantic and pragmatic bits. This can be done, perhaps, if one is willing to settle for a few basic material-culture concepts like tools, fire, earth, water, the sun, the moon, the stars, the human body and its parts (these being, in fact, the very sort of concepts on which glottochronology is based -- see 3.2.), and for a few non-material-culture concepts like anger, fear, jealousy, mother love, the nuclear family, and language itself. But a full taxonomy of these non-material concepts still awaits development, and cannot be expected to develop until the social sciences, arts, and humanities have reached the present stage of the natural sciences and mathematics.

A final obstacle to the dream of universal semantics/pragmatics is the problem of defining the ultimate particles or bits from which every semantic and pragmatic construct can be assembled. Assuming that these bits can be identified, and that their number is finite, how can we be assured that every analysis of language will use them in exactly the same way. The only means we have of rigorously defining the bits must ultimately lead back to human language and its interpretation by human beings. Even modern artificial languages, such as those of mathematics, chemical formulas, and computer technology, must ultimately be 'translated' into some human language in order to be understood by those who use them. Thus, even if a universal grammar based on generative semantics could be constructed, it would already be somewhat circular.

3.6. The psycholinguistic view

Universal grammar, of whatever theoretical or philosophical orientation (generative, semantic/pragmatic, symbolic logic, behavioral, cognitive, or any combination of such approaches), has always had a great attraction for psychologists interested in language, for linguists interested in psychology, and for those modern researchers who call themselves psycholinguists. The reason is obvious, given the definition of the universal grammarian stated in Section 3.5. Once we have discounted the 'sound' events of speech, or the physical and physiological channels through which spoken language passes from speaker to hearer, what events are left to be universal? Obviously they are those other (non-motor, non-perceptual) events which take place in the brain of the speaker/hearer -- that is, the neurological channels that complete the circuit of communication via language. It is primarily through the *experimental* techniques of psychology, rather than through the observational and analytical research techniques of linguistics and sociology, moreover, that we can hope to discover what happens inside the human brain over and above the perceptual and motor aspects of speech. Until physiology, biochemistry and biophysics reveal these secrets of the brain, in fact, experimental techniques are our only access to them.

The social-interactional aspects of language determine, and eventually modify, the accepted *meanings* of individual language forms. So do changes in the physical universe, and changes in knowledge about the physical universe -- for example, the meaning of 'moon' has changed somewhat for speakers of many different languages as the result of manned and umanned space flight during our lifetimes. But the *forms* of language themselves change inexorably, and independently of meaning shifts (if we accept the Neo-Grammarian Hypothesis). All these phenomena can be investigated in terms of social groups and processes -- speech communities, language communities, traditions and innovations. The universal grammarians, at least, believe that the phenomena can be investigated without reference to social groups and processes, but simply in terms of linguistic items and rules.

We know that individuals can aquire, simultaneously or successively, different linguistic codes (or sets of items and rules) to operate in different social situations and domains, and that they can mix these codes even in the same situation or domain. But we also know that individual perception and use of language forms and meanings *in the same code* may change 'idiolect' will not hold up even if we can separate the codes by grammatical criteria, because whatever the idiolect is, it is constantly subject to change. If we define a language as the sum total of common characteristics of mutually intelligible idiolects for a given population, must we then restrict our data collection to monodialectal, monolingual subjects of a certain age-group within the population also?

The way in which individual speakers/hearers change their uses and interpretations of forms and meanings, drawn from several codes or influenced by them, is obviously a complex subject. Even the differences between 'mother tongue' or 'first language' and 'second language' acquisition are not easy to characterize, although we know they exist. The study of language acquisition and language learning in general, and of the successive stages in the development of specific phonological, syntactic, semantic, and pragmatic aspects of various language codes in particular, cannot very well be conducted with groups of subjects. This becomes the special province of the psycholinguist, with his experimental and individual case-study methodologies. The results of his research in these areas can, of course, be checked against what is known about groups of language learners and users from linguistic and sociolinguistic research.

Psycholinguistic inquiry tends to focus on universal grammar topics for another good reason: the unquestioned physiological universality of the human brain. Despite the enormous range of human speech varieties throughout the world, normal children (of every type of heredity) seem to be able to cope with whatever variety of human language is first presented to them and, without overt teaching or self-conscious 'learning', become fairly fluent in that variety within the first five or six years of life. Chimpanzees, dolphins, and parrots do not ever accomplish this, no matter how long they live. But many human children are able to accomplish it in more than one distinct speech variety.

Since the social and physical experience of the child is a 'given' of the environment in which he is born and raised, and since the 'meaning' part of any language code he is exposed to will derive mainly from this environment, the task of the first-language learner simply becomes to match language forms with language meanings. And since, for the very young child, there can be no pre-determined limits to the range of forms and meanings he is likely to encounter (having no other language system to refer to), his task is quite analogous to that of the universal grammarian: He must be ready to tackle *any* new form and *any* new meaning, and link them up somehow. That the normal child is invariably able to do this with respect to at least one language code argues for universality in the *ways* that meaning is associated with form in any language, if not for universality of the meanings themselves (as the generative semanticists apparently assume is the case).

The psycholinguist's research on individual language-learning and language-using subjects, therefore, is of great value in that it can inform us of the truly universal aspects of human language -- how the human brain acquires, processes, stores, and retrieves information coded in one of the almost limitless numbers of speech varieties through which human beings interact socially. To the extent that the grammarian can use these findings in constructing his grammatical models, so much the better. The social aspects of language cannot be bypassed by focusing on individuals, any more than the forest can be described in terms of individual trees. But since education involves individual learning as well as group learning and teaching, the psycholinguistic approach has a great deal to offer us in terms of our attempts to study the role of language in schools.

The contributions of the psychology of language, in fact, help us not only to better interpret the uses of media and channels of instruction in schools, but also to see more clearly the relationships among the teaching, learning, and acquisition of languages as such within the school environment by individual students. And psycholinguistics, as we shall see in the next section, gives us the key to understanding the most important 'language distance' that every school-child in the world faces: the distance between the language medium and his version of it.

3.7. **Channel distance**

We return now to the original problem of measuring the distances between language and speech varieties. At the end of Chapter 2 (2.7.-2.8.) we saw how the prescriptive view of language, which is held by many school authorities, along with more natural processes of standardization, yields not only a means of identifying and classifying school languages but also yields a set of ideal language *curriculum* goals for each language type occurring in the schools. The central issues here can now be viewed as two separate measures of language distance:

1) *Intra-medium distance,* or variation within a given language type (however defined);
2) *Inter-medium distance,* or variation among the language types themselves (however classified).

In the last two sections of this chapter we reconsider these two distances in the light of the various grammatical, linguistic, and associated theories that have just been discussed (3.1.-3.6.).

The comparative method gives us a way of classifying and measuring the distance between language varieties by considering regular sound change (phonology); the classification is genetic and the distances are measured in terms of the closeness of language kinship. The historical perspective adds to this the possibility of measuring time-distance in the 'same' language by looking at regular vocabulary attrition (lexis) as well as other longitudinal changes in syntax and morphology. Descriptive grammar and sociolinguistics use the yardstick of mutual intelligibility in different ways, but both explicitly recognize the social nature of language. Universal grammar, together with much of psycholinguistic theory, bypasses the problem of social groupings by assuming a common, underlying set of human experiences which are grouped (semantically) and transformed through various operations (syntactically) to become surface features of distinct varieties at the level of speech or writing; the distance between any pair of such varieties can be quantified simply by comparing sets of semantic, syntactic, and phonological rules. Prescriptive grammar and language standardization, by contrast, tend to create 'neater', and hence more easily classifiable, language varieties than actual speech and writing would suggest.

Which of these grammatical, linguistic, and associated theories will provide us with criteria useful in discussing the channels, texts, and media of instruction in schools? The answer is that none of them will, and that all of them will. Let us first state what our concerns are with regard to the *channels* of general curriculum:

> The only kind of linguistic distance relevant to general curriculum is the distance between what comes through each channel of instruction, oral or written, and the individual student's version of what comes through the channel.

Our definition of *a text* (1.5.), as the sum of the recorded features of channel use in a particular place over a designated time period, includes non-verbal as well as verbal channel use, and does not restrict the number of participants. Thus any individual student's interpretation of the various features of a given text, whether he is a participant or merely an observer with respect to that text, ultimately depends on his interpretation of what comes through each separate channel used in the text. The manner in which he mentally or overtly records the text features may likewise involve all three types of channel -- oral, written, and non-verbal -- and these recording channels do not necessarily correspond to the channels orginally used.

It is useful, however, to assume that, if called upon, the student *could* record or reproduce overtly his version of what came through the oral channels in oral form, and that he *could* record or reproduce overtly his version of what came through the written channels in written form. (No such parallel assumption needs to be made for the non-verbal channels; though part of the text, they are not relevant to our concern with language distance.) The student's 'distances' with regard to the verbal portions of any text can then be stated in terms of the discrepancies between original oral or written text features and his version of these features as recorded or reproduced overtly.

The sum total of the student's versions of the verbal portions of all the texts in a given language medium that he is exposed to, if recorded and analyzed by a descriptive linguist, would reveal a distinct variety of the original medium. If the student's intra-medium distance is quite small (that is, if he is quite proficient in the language medium of the original texts), the student's variety may be for all practical purposes identical with the original text variety. If the student's distance is very great, there may not be enough text features recorded to get any idea of what his version of the medium is like. But if, as in the typical case where the school medium is different from the home medium, the student's distance is neither very great nor very small, his versions of the verbal portions of texts will reveal a distinct variety of the original text medium -- a variety which he may or may not share with other students in the same class or school. (This last kind of learner's language variety is often called 'interlanguage' in the literature of pscyholinguistics.)

Thus the distance between what comes through each oral or written channel of instruction and the student's version of it can properly be called *intra-medium distance*, because there are two language varieties involved: the language variety represented in the original text (which itself may be a non-standard variety) and the variety represented in the student's recording or reproduction of the text (which again may be either a standard or a non-standard variety). We can also characterize this type of distance as *channel distance*, because it always applies no matter what spoken or written language variety is actually used as the medium for a given text, incuding instructional texts. This terminology also allows us to distinguish, when necessary, between oral channel distance and written channel distance.

Whether the medium in question is conveyed through oral or written channels, the individual student's competence in that medium will not be perfect. If he has no competence in it at all, then the oral and written channel distances will be infinite. To the extent that the student's basic competence improves, either through language instruction or simply through continued exposure to the medium in the school, at least the oral channel distance will be reduced; if his literacy competence improves, the written channel distance may decrease accordingly. If the student's fluency and competence in the relevant language variety is near-perfect, and if his literacy is well-developed, both types of channel distance may approach zero. Channel distance, moreover, is the *only* distance between language and speech varieties which can possibly affect the student's linguistic readiness to absorb instruction in general curriculum subjects. (His cognitive and experiential readiness to absorb such instruction is, of course, a separate matter.)

Note that in order to make use of this measure of distance, it is not even necessary to know what the student's 'mother tongue' is. If all the instruction is given orally in the 'mother tongue', of course, one would expect the distance to be much less than if all the instruction were given in a 'foreign language', but there will still be some distance to measure -- especially written channel distance. We don't have to know how many different languages and dialects the student can handle in general, or how 'good at languages' he is, or even how well he does in the school language curriculum. We don't have to know, either, how many different media of instruction are used in the school he attends, or whether he is considered to be getting 'monolingual' or 'bilingual' education. In fact, we don't even have to know how well his teachers handle the various media and channels of the school. The only requirements are a description of the spoken or written text features actually being conveyed *at the time* of the instruction, and an assessment of the student's ability to record or overtly reproduce these features *at that time*.

The great advantage of this type of distance measurement is that it allows for changes in the individual student's control of the relevant media *throughout* his period of schooling -- changes which we know must occur if the schooling is to succeed. In Chapters 5 and 6 we will be looking more closely at the interplay between language acquisition and other knowledge, arts, and skills, but for the present we can simply assume that changes in language proficiency (both increases and decreases) do occur as a direct result of media choices made by the school or school system. This way of measuring distance can also be applied regardless of differences in media choice and channel emphasis of a particular school at different levels of instruction. In other words, it makes no difference whether the 'same' language is used throughout schooling, or whether early 'monolingual' education, conducted mainly through the oral channels, later becomes 'bilingual' and heavily dependent on the written channels -- the same kind of yardstick can always be used to determine the extent to which linguistic distances are interfering with the educational process.

But how do we go about actually measuring channel distances? The short answer to this question is that the measurement can be done by various kinds of language tests, principally diagnostic tests and proficiency tests that emphasize comprehension. If there are adequate samples of oral and written school texts to base the tests on, and if certain kinds of testing procedures are correctly followed, the measurement can be reasonably reliable, and its validity can be checked in a number of different ways. The long answer to the question is presented in the rest of this book, but mainly in Chapter 9. For the present, let us simply assume that the distance between any given collocation of oral or written text features and the student's version of these features, or at least the *probable* distance between the two sets of features, can be measured in some way.

3.8. Language variety distance

So far, our model for measuring intra-medium or channel distance seems to follow most closely the positions of the universal grammarian and the psycholinguist. First, the relevant data are gathered from individuals (students, teachers, producers of instructional materials) and not from representative members of social groups. Second, the measurement of distance between language varieties can be made without considering genetic relationships and time factors -- it can be applied, for example, to a student's written channel distance when he reads an older form of some language (e.g. Chaucer) as easily as it can be applied when he reads the modern form of it (e.g. James Joyce). Third, the measurement need not (in theory) discriminate between a prescriptive or standardized form of a language and a natural or colloquial version of it -- the reasons why the text participants produced the text in a particular code or variety need not be explored. And lastly, the technique of measurement itself has psycholinguistic implications: What is to be assessed is the individual student's *competence* to deal with each type of oral or written channel input, and not his *performance* as an actual text participant on some occasion; this involves discovering what his 'version' is for each kind of text he is exposed to, whether as participant or as observer.

When we come to the problem of measuring the second kind of language distance, that which pertains to the extent of variation among the language types themselves, it becomes necessary to go beyond the positions of universal grammar and the psychology of language. The former does not give us (as yet) any tools for measuring inter-medium distance, and the latter leaves the problem of identifying and classifying language types to linguistics proper. We have to look, therefore, to historical and comparative grammar, and to descriptive grammar and sociolinguistics for criteria to be used in measuring inter-medium distance.

This second kind of distance among language and speech varieties is more directly relevant to language curriculum than it is to general curriculum. As we have just seen, the specific variety of language or speech used in a given instructional sequence or examination does not really matter from the general curriculum standpoint; only the student's comprehension of, or competence in, the variety matters. But all schools use at least one language as a medium of instruction, some schools use more than one language as a medium, and many schools teach still other languages as part of their language curricula. Since it is always possible that none of these language media and subjects match students' home language, the designers of language curriculum and language instruction usually need to take cognizance of *different* language varieties, and to treat them as different. Some of these language varieties are more closely related than others, and so some measure of the distance separating them is needed for the guidance of language curriculum developers and language instructors (and often of general curriculum developers as well).

What light do the various theories of grammar, linguistics, and related disciplines shed on the problem of measuring this kind of distance? In one sense, the positions of the descriptive grammarian and the sociolinguist have already had to be included in the measurement of channel distance (previous section). It might be theoretically desirable to obtain a detailed account of the linguistic characteristics of every oral and written text occurring in classrooms and in self-instructional materials in a given school at a given time, and to obtain a detailed account of every student's individual version of these texts, but in practice it is never feasible. Some kind of shortcut is needed. What is feasible is to treat school texts in same way that we treat the texts of communication and interaction in the society at large -- that is, to group them according to text medium, topic, setting, participants, principal channels used, and so on, and then to analyze the grouped texts according to their linguistic characteristics. As for the student versions of texts, these can be guessed at by grouping students according to their general range of proficiency in the text media and then randomly sampling the groups to discover typical text versions.

Classification and grouping, in turn, require the application of techniques used in descriptive grammar and sociolinguistics. The kinds of measures suggested by universal grammar and psycholinguistics remain the basic ones relevant to the measurement of intra-medium or channel distance, but they have to be modified when applied to whole classes or schools instead of individual cases. And at this level language standardization and prescription will also have to be taken into account, and this will affect classification and grouping indirectly, although the degree of standardization is theoretically irrelevant to what is being measured.

The same principles of classification and grouping would seem to apply to the measurement of inter-medium distance. But the descriptive and sociolinguistic yardstick of mutual intelligibility itself will be of no use in measuring the distances between language and speech varieties. It is much too crude an instrument to measure the constantly *changing* distances between the various school and home languages. What started out as being gibberish to students may, suddenly or gradually, become meaningful as a consequence of constant exposure to the medium. Two varieties which are mutually unintelligible in the society at large may come to be, through their association and mixing in the school context, mutually intelligible so far as the students are concerned. Accumulated experience of the world, both inside and outside the school walls, along with the cognitive development of students as they grow older, may sharpen their ability to interpret any medium of instruction more effectively, and so on. In other words, we cannot base a typology of school and home languages on the usual criteria of either descriptive grammar or sociolinguistics, because the typical school is not populated with adult language users and it is often unrepresentative, in a linguistic sense, of the society at large.

Yet it is still desirable to have some way of indicating the degree of intrinsic difference between pairs of language types relevant to the school. For example, a school which uses only different dialects or social variants of the 'same' language can be called monolingual, and a school which uses obviously different languages can be called bilingual. We also need a way of distinguishing different historical stages of the 'same' language -- so that, for example, the language varieties used by the author of Beowulf, by Chaucer, by Shakespeare, and by James Joyce do not all turn out as simply 'English'. Thus the historical and comparative points of view will also prove useful in a classification of broad language types, and what we have been calling inter-medium distance can be characterized simply as *language variety distance*.

To summarize the discussion in this chapter, all four branches of linguistically-oriented grammar, plus the associated disciplines of sociolinguistics and psycholinguistics, plus prescriptive and natural standardization of languages, all have some relevance to the measurement of distance between language and speech varieties. The two main types of distance we are concerned with are intra-medium distance, which can also be called *channel distance*, and inter-medium distance, which is more properly termed *language variety distance*, because it applies to home languages and school language subjects as well as to the media of instruction proper.

CHAPTER 4

OPTIONS IN CURRICULUM

4.1. Language types redefined
4.2. Bilingual education redefined
4.3. Formulas of distance
4.4. Curriculum types
4.5. General curriculum options
4.6. Language curriculum options
4.7. Constraints on media choice
4.8. Constraints on implementation

The discussions in the first three chapters have laid the groundwork for the formulation of new definitions of language types and curriculum types. These definitions will make it possible for us to examine the relation between the channels and media of instruction in terms of options available to schools and school systems for curriculum planning and implementation. The two kinds of linguistic distance discussed at the end of Chapter 3 (3.7., 3.8.) can now be measured (in rough terms) and the results of the measurement utilized in examining the options for both language and general curriculum.

Various constraints on curriculum planning and implementation will be found, in general, to fall into two main categories:

1) those factors which have to do with students' and teachers' language proficiency and their attitudes toward the relevant language types;
2) those factors which have to do with the fit between oral and written versions of the same language type, and with the availability of instructional materials in each school language.

4.1. Language types redefined

Spoken and written languages, as we have seen, exhibit enormous variety, no matter what kind of linguistic or grammatical theory we resort to, and it is difficult to classify languages and dialects or to measure the distance between any two varieties with precision. Standardization of languages, whether accomplished naturally or through overt and successful prescription by powerful authority, tends to reduce this variability, however, and eventually provides a more tractable number of language types to be considered.

Individual speakers and writers also exhibit enormous variety in the range of language codes which they use and understand, but another dimension of standardization operates in favor of any school or school system: This is the tendency of the *texts and channels* of instruction to influence the development of individual language proficiency and choice of codes to conform to the prevailing pattern of the school. Just as social pressure from other students has the power to standardize peer language, intellectual pressure from the curriculum has the power to standardize school language to some extent, affecting every student in more or less the same way.

In this section, both kinds of standardization process contribute to the formulation of new definitions of language types, which will serve our purposes better than the popular terms discussed in Chapter 2. The basic definition of *a language* is designed to fit the prescriptive view of most local school authorities, because *language curriculum* (if not actual language instruction) must always take this view into account. The basic language types have also been chosen for practical reasons, and likewise rely on prescriptive criteria. The resulting language types are further modified, however, in terms of the criteria of comparative and historical grammar. (The definitions and classifications of other branches of grammar and linguistics do not play a role at this stage.)

> *A language* is any written language or speech variety, or group of varieties, defined as a single language by school authorities in the locality where it occurs, or labelled in such way that a single entity is implied. The linguistic characteristics of a given language are whatever the local authority says they are supposed to be; in the absence of such a characterization, they are whatever can be deduced descriptively from texts certified as authentic samples of the language variety in question.
>
> *A national language* (NL) is any language designated by the government of a given nation as the *single* language of primary importance in that nation. (There cannot be more than one NL in any country.)
>
> *A provincial language* (PL) is any language designated for primary importance (after the NL) in an administrative division smaller than a nation -- for example, a state, a province, a territory, a canton, a constituent republic of the USSR, and so on.

An official language (OL) is any language other than NL or PL which is designated by the government as being official, or by educational authority in a given school as being the main language of that school, or as the main medium of instruction for certain subjects.

A foreign language (FL) is any language other than NL, PL, and OL which is designated by the government as being foreign, or by educational authority in a given school as being a subject of study in its own right (but not a medium of instruction for any subject).

A vernacular language (VL) is any other modern language considered indigenous to the nation or province where it occurs, or any other modern speech variety given official recognition of some sort. (The VL need not have a written version to qualify.)

A classical language (CL) is any other language relevant to education -- in effect, a dead language. (The CL need not have an oral version).

With this overall classification in mind, comparative and historical criteria can now be applied to qualify the basic terms. The most useful type of qualification is in terms of the school populations which are supposed to undergo instruction through or in the basic language types. In each case, an asterisk (*) in front of the language term or abbreviation (like the quotation marks around the popular terms) indicates that the term in question is something of a misnomer.

A *national language (*NL) is any national language of which the oral varieties are distinguishable (by two or more nodes on a tree diagram) from the speech varieties used at home by a majority of the school population. For example, English is in general the NL of the United States, because most school populations speak some dialect of English at home. In a predominantly Spanish-speaking school, however, it would be *NL (whether or not it was the medium of instruction in that school).

A **provincial language* (*PL) and an **official language* (*OL) are defined analogously to *NL. For example, French would be *PL in Quebec schools with majorities of English-speaking students. The 'first language' medium of instruction for almost all English-stream schools in Singapore would be classified as *OL; although English is an official language in Singapore, hardly any schoolchildren speak it at home. On the other hand, Malay (also an official language) would be classified as OL in most of the schools where it is a medium of instruction, because there are Malay-speaking majorities in such schools.

A **foreign language* (*FL) has just the opposite kind of definition. A *FL is any foreign language of which oral varieties are in fact spoken natively by a majority of the school population. Thus, at the time when Spanish was officially designated as a 'foreign language' in the United States, native speakers of Spanish studying the language as a subject would be studying *FL in our terminology.

A **classical language* (*CL) is a dead language which represents an earlier stage of the language used at home by a majority of the school population. For example, the language of the Quran would be *CL in schools with Modern Arabic-speaking majorities, but CL in most schools in Turkey, Iran, or Indonesia.

A **vernacular language* (*VL) is any language so designated of which the oral varieties are genetically distinguished from the speech varieties actually used at home by a majority of the school population. Examples of *VL are found in many parts of the Philippines, wherever a plurality (rather than a real majority) vernacular has been designated as an auxiliary medium of instruction in early schooling.

Beyond these broad media types, we can further subdivide our classification into two rough channel types, oral and written, because we know that in all cases (except perhaps the classical and vernacular languages) there will be significant differences between spoken and written versions of the same language type. The symbolization for this channel distinction will be introduced and exemplified in Section 4.3., along with the symbolization for 'student versions' of the language types relevant to education.

These generalized language types will serve fairly well to cover the *intrinsic* distances between spoken and written language varieties typically designated by governments and school systems as media of instruction, as subjects of language curriculum, and as reference languages. They will not cover all the language types which students use in their homes and communities, because many speech varieties so used, in particular, are not recognized by governments and school systems, but the general category of vernacular language can be extended to include them where necessary. The generalized language types also eliminate the need for confusing terms such as 'mother tongue', 'first language', and 'second language' (see Chaper 2), and make certain necessary distinctions which are not reflected in the popular terminology. The formulas for measuring language variety distance are given in Section 4.3., along with those for measuring channel distance.

4.2. Bilingual education redefined

Combinations of two or more language types in the same school have already been discussed (in Section 2.6.), and it was observed that the term 'bilingual education' is applied to many different situations which have little in common, and that other terms associated with it can be equally confusing. The literature of sociolinguistics and the sociology of language (see 3.4.) contains many useful classifications of bilingual education types, with systematic terminology to match the distinctions. The sociolinguistic classifications, however, reflect a primary concern with the role of language in society as a whole, rather than simply its role in education. For example, the term 'additive bilingual education' has been used to characterize socially desirable forms of educational language treatment which do not result in loss or denigration of home or ethnic languages, especially those of minority-group students, 'subtractive bilingual education' being its opposite term. Such concerns, however, are beyond the scope of our main topics. Some other terminology must be found to replace the popular terms in this area and to reflect the kind of classification relevant to language use in schools. As it happens, the language typology of the previous section will suffice as a starting-point for firm definitions of monolingual, bilingual, and multilingual patterns found in schools all over the world.

> *Monolingual education* refers to instruction in schools where only one language type (as defined in 4.1.) is used as a medium of general instruction -- that is, not counting language instruction or language curriculum (see 1.8. for definitions).
>
> *Partial bilingual education* refers to instruction in school where two language types are used as media of instruction in different subjects of the general curriculum -- that is, in clearly differentiated instructional sequences conducted at the same educational level. In most known cases, the two media are not used with equal frequency, and one language type dominates the other.
>
> *Sequential bilingual education* (also called 'transitional' in the literature of sociolinguistics) refers to instruction in single schools or school systems where two language types are used *at different times* as media of instruction in the same subject areas -- that is, in direct continuation of a planned instructional sequence (e.g. in science or history) but with a clear separation of media from one instructional level to the next, and with no formal reversion to the original medium after the change has taken place. The typical case is a change of media between primary and secondary schooling, or between secondary and higher education.
>
> *Full bilingual education* refers to instruction in schools where two language types are used *interchangeably* as media of instruction for a majority of instructional sequences -- that is, alternating in the same

subjects, or determined by the teacher's own language preference rather than the preference of the school for that stage of instruction.

Translingual education is a form of full bilingual education in which the oral texts are commonly in one language type and the written texts in another (see 1.5. for definition of 'texts'). This situation typically occurs when instructional materials in the written version of the preferred language type are lacking, so that teachers in effect have to translate or interpret written materials to their students in a more familiar language type. (Translingual education, however, is not always officially recognized as such.)

Multilingual education refers to instruction in schools where three or more language types are used as actual media of instruction. Full multilingual education is rare, but partial and sequential models exist in various parts of the world. Multilingual education quite often contains translingual elements as well -- for example, in certain Southeast Asian schools the early oral medium may be Cantonese and the written medium Mandarin, with both being gradually replaced or supplemented by English in secondary and higher education.

The two languages involved in bilingual education (or all the languages involved in multilingual education) will be classifiable in terms of the list given in Section 4.1. In bilingual education, it is rare for the two language media to be of the same type. Since national and provincial languages (NL and PL) are by definition unique to their localities, and since foreign languages (FL) are by definition confined to language instruction, and classical languages (CL) are seldom used as actual media of instruction, the occurrence of two or more languages of the same type in bilingual or multilingual education is generally limited to official and vernacular languages (OL and VL). The most common combinations of two media are NL + OL, PL + NL, VL + NL, and VL + PL.

As *subjects* of language curriculum or language instruction, on the other hand, two or more languages of the same type frequently do occur in the same school. For example, in Indonesia, upper secondary students can choose among English, French, and German (all FL), but they must opt for one of these languages as a required subject. In Singapore, all of the OL (Mandarin, English, Tamil) and the NL (Malay) occur as required language subjects, one of which pupils must choose from the very beginning of primary school and continue studying to the end of secondary school.

Thus the classification of language types, when added to the appropriate label for the 'lingual' model of education, becomes a convenient way of characterizing school language patterns. For example, 'sequential PL + NL (NL, one of 3 FL)' would serve to describe the language use pattern of the Indonesian school system at present (language subjects in parentheses).

4.3. **Formulas of distance**

In the context of this classification of broad media types and their combinations in educational systems, we now return to the original problem of measuring two kinds of language distance: channel distance (3.7.) and language variety distance (3.8.). Some actual formulas for characterizing (in a rough way) these distances will be very useful in discussing the planning and implementation of both language curriculum and language use in general curriculum.

Channel distance refers to the discrepancy between the verbal text features actually occurring in a given instructional sequence and the individual student's version of those features. As pointed out previously, an accurate description of these two points of reference is often impossible to obtain. But students in most schools are already arranged in *classes* or some sort -- according to age, length of time in school, ability in a subject of study, overall previous academic performance, and so forth. These classes, moreover, are usually of a statistically convenient size, neither too large nor too small to generalize about, most of them averaging between 15 and 60 students, depending on the level and location of the school. We can therefore make use of this externally determined grouping into *classes* in the same way that we have made use of whole school populations in defining language types.

If we set aside team teaching for the moment, we will find that most classes have a single teacher as the source of texts and interactional media for a given phase of the instructional sequence. If we set aside truly individualized instruction, we will find that most classes have a single common set of instructional materials as the source of texts and non-interactional media relevant to the sequence. As far as peer teaching is concerned, we have in most cases a built-in guarantee that the instructional media will reflect the composition and average linguistic skills of the class itself. All that remains is to observe what media the teacher is using for interaction with the class, plus the media embodied in the instructional materials, and to classify these media in terms of our broad types.

Since we are dealing with individual classes, we can also move our asterisked language type designations (4.2.) a step downward: from the school level to the class level. Thus *VL would refer to a vernacular which is different from the home language of the majority of students in the class (though not necessarily in the school as a whole). Next, we can indicate the text channels concerned by replacing the symbol L(language) with W for written media and S (spoken) for oral media produced by teachers or instructional materials. The symbolization *VS then refers to an unfamiliar vernacular language being spoken by a teacher (or a radio broadcaster or a recorded voice on tape). The symbolization NW means that the printed instructional material (or the teacher's handwritten message on the blackboard) is in a written form of a national language familiar to the majority of the class, and so on.

Having further classified and symbolized the media of instruction in this way, we are now in a position to consider the other point of reference: the student's version of each medium in question. Of course, every individual student's version will be somewhat different, but class grouping again leads to a shortcut. If by means of language tests, error analysis, teachers' evaluations, and other means of assessment we can get a picture of the class's *average* competence in the medium (that is, a composite 'interlanguage' or approximate version of typical texts), we have got hold of a second point of reference comparable to the first. Since many media of instruction also recur as part of the subject matter of *language courses*, in which frequent testing and other assessment takes place in any case, it should be a simple matter to assess a given class's average competence. (The reasons why it is *not* always a simple matter to get the right kind of data from language class performance and tests are discussed further in Section 4.6.)

Assuming that we can obtain some kind of assessment of a class's average competence in a given medium, we can indicate the channel that is involved by symbolizing this with R (reading) when competence in the written channels is assessed, and with U (understanding) when competence in oral channels is assessed. These two symbols, like W (writing) and S (speaking), then replace that L of the language designation. The symbolization CRc would thus refer to the collective reading competence of class *c* in some classical language, and *OUc would refer to the class's average understanding of an official oral medium which is different (*) from their common home language.

These two points of reference will yield the following type of formula:

$$\begin{array}{l} XWi - XRc \\ XSi - XUc \end{array}$$

-- in which X = any one of the broad language types (4.1.)
W = the written portions of a text in a specific medium
i = a given text forming part of an instructional sequence
R = average reading competence in a specific medium
c = a given class of students
S = the spoken portions of a text in a specific medium
U = average understanding competence in a specific oral medium

The minus sign indicates that whatever value we are going to assign to XW and XS will always be equal to or greater than the value of XR orXU.

The last step in the application of this type of formula will be to assign finite gradations of approximation between near-perfect competence in the language variety and zero competence, so as to be able to assign numerical values to our equations. If we think of all assessments of competence in a given medium as being criterion-referenced (as they must be in theory) and as rough estimates (as they usually have to be in practice), five gradations in the scale will probably be enough. Suppose we assign values as follows:

100%	attainment of criterion	= 4
75-99%	approximation of criterion	= 3
50-74%	approximation	= 2
25-49%	approximation	= 1
0-24%	approximation	= 0

If we set the hypothetical value of the written or oral text itself at 4, this will give us five possible degrees of difference (0 to 4) between any XW or XS and its corresponding XR or XU. This is the measure of *channel distance*. For example, let *m* stand for a given stage of instruction in mathematics and *h* for a given stage of instruction in history. Let *a* and *b* represent classes studying these subjects. Typical formulas of distance would look like these:

$$(1)\quad VSm - VOa \quad = \quad 4 - 3 = 1$$

$$(2)\quad FWh - FRb \quad = \quad 4 - 1 = 3$$

Formula (1) is read as follows: 'The difference between the actual oral texts in the vernacular medium of mathematics instruction (value 4) and class *a*'s collective version of these texts (value 3) is on the order of 1. Since the class's average understanding of the oral medium concerned measures at between 75% and 99%, this means that from 25% to 1% of the oral instruction is lost for linguistic reasons'. Formula (2) is read as follows: 'The difference between the actual written texts in the foreign medium of history instruction (value 4) and class *b*'s collective version of these texts (value 1) is on the order of 3, meaning that from 51% to 75% of the written instruction is lost for linguistic reasons'. (Although foreign languages are not used as media of instruction proper, reading assignments in various subjects areas are occasionally given in them; this example is not as far-fetched as it might seem.)

We can, of course, break up the continuum of language competence in other arbitrary ways, in order to create more or fewer degrees of channel distance. We can also vary our seemingly fixed value of 4 for XS and XW, by grading the *linguistic difficulty* (as distinct from the content difficulty) of the material presented through the channels -- for example, by assigning texts in 'easy' spoken or written styles and registers a value of 3, and texts in 'difficult' styles and registers a value of 5 or 6. (This involves the extra step of text analysis -- see Section 7.7.) Or we can simply leave our assessments of average class competence in percentages, and subtract these figures from 100 to get a measure of channel distance. But the basic technique for measuring differences between texts in various media and students' versions of them will remain the same.

The measurement of the other relevant type of distance, inter-medium or *language variety distance*, can be done in a similarly crude fashion by using the criteria of comparative and historical grammar, provided only we have diachronic studies of the two language varieties in question. For example the Indo-European 'family tree' diagram given in Section 3.1. provides some of the information needed to assign values to the distances between any pair of languages occurring in the diagram. We simply count the number of nodes (or branchings) it is necessary to pass through in order to get from one variety to another, and that becomes the value for the language variety distance.

The accuracy of this value, of course, will depend on the accuracy of the comparative/historical information, and our 'family tree' (3.1.) is not particularly appropriate for this purpose, as it has been greatly simplified. But assuming that the information is sufficiently accurate, we get the following rough values for distances between English and some of the other Indo-European varieties:

British English - American English = 1
Modern English dialects - Frisian = 2
English - High German = 3
English - Gothic = 4
English - Armenian = 5

If there is no information indicating that two varieties are genetically related, we simply indicate the distance value with a question mark (?):

English - Swahili = ?

Language variety distance values (even those obtained from information much more accurate than this) should not be interpreted as strictly arithmetical values but rather as rankings. That is to say, the values shown above do not imply that it is twice as hard for an English speaker to learn Gothic as it is for him to learn Frisian. The values are at best relative, and are designed only to give an indication (e.g. for language planning purposes) as to the sort of distance separating a given pair of language varieties. Measures of mutual intelligibility could serve much the same purpose, but such measures are usually difficult to obtain and are not always appropriate to the school situation.

4.4. Curriculum types

Definitions of the terms *curriculum, general curriculum, language curriculum,* and *language instruction* have all been given in Chapter 1 (1.8.), but will be repeated here as necessary. These definitions make possible a curriculum typology which parallels the language typology given in the first section of the present chapter. Since the broad language types range from vernacular to foreign, in terms of their relationship to each other, a similar range of curriculum types is suggested, and is in fact found to exist.

Not all schools determine their own tests and examinations (and hence their own curricula). Many schools belong to school systems, which not only dictate or suggest the curriculum but may also develop and/or administer the tests and examinations. School systems may have a political-unit base (municipal, provincial, national), a religious, ethnic, or doctrinaire base (Catholic, Muslim, overseas Chinese, socialist) or an international base (British Commonwealth, French Union, European Economic Community, etc.). Higher education institutions not belonging to any formal system as such may still be classified together on the basis of common examinations for which they prepare students -- for example, law, medicine, engineering, and other discipline-oriented or profession-specific schools. In all cases, in fact, it is the common tests and examinations which best define the curriculum of a given school or school system.

We are now ready to repeat the definition of curriculum and list the various curriculum types that occur most frequently.

> *Curriculum* is defined by the content of tests and examinations which students in a given school undergo at various stages of instruction and which they are expected to undergo soon after leaving the school. If no tests or examinations are given or expected, curriculum is defined by the stated aims and objectives of the school or school system. If no aims or objectives are stated, curriculum is defined by the content of the instructional materials and texts used by the school.
>
> *An international curriculum* is a curriculum for which the tests and examinations are common to more than one nation -- for example, the Cambridge 'O-Level' and 'A-Level' certificate examinations.
>
> *A national curriculum* is one for which the tests and examinations are common to an entire nation. Many modern countries have such curricula, and the examining authority is not necessarily a governmental agency (for example, the Educational Testing Service in the United States is a private concern).
>
> *A provincial* or *local curriculum* is a curriculum for which the tests and examinations are common to administrative or political divisions smaller than whole

nations -- for example, states, provinces, territories, cantons, constituent republics of the USSR (provincial curriculum); cities, towns, municipalities (local curriculum).

An occupational curriculum is one for which the tests and examinations are externally administered by organizations concerned with qualification, certification, or licensing for specific trades, professions, and occupations. Such organizations need not be governmental agencies of any country or international body.

A doctrinaire curriculum is one for which the tests and examinations are common to school systems which have neither a political-unit nor an occupational base -- for example, Catholic and Muslim schools in some countries.

A self-contained curriculum is any other type of curriculum -- for example, that of a school which does not belong to any system, administers all of its own tests and examinations, or does not test or examine its students at all.

Obviously, many schools throughout the world have curricula of more than one type, just as schools may give language and general instruction in more than one language type. The same school may prepare its students for examinations at the local, state, national, and international levels and administer its own tests besides -- in this sense it has curricula of several different levels. The general curriculum types listed above, therefore, are not mutually exclusive within a given school.

Just as language types may have wide internal variation, especially with regard to spoken varieties, the curriculum types also exhibit variation even when they are defined by a common set of examinations. The instructional materials and teaching/learning strategies used to prepare students for the same national examination, for example, may be as different as the dialects within the national language, and the teachers who prepare the students may vary as much in their capability to teach general curriculum subjects as they do in their individual language proficiency. Nevertheless, the general curriculum types give us points of departure for further discussion of the interplay between the channels, texts, and media of instruction.

In considering the options which schools *ideally* have in their choice of media of instruction, we can begin by arranging the language types alongside the curriculum types for a general comparison. (The order in which the terms were defined has been changed slightly to facilitate this.)

Language Types	Curriculum Types
1. Foreign	1. International
2. National	2. National
3. Provincial	3. Provincial and Local
4. Classical	4. Doctrinaire
5. Official	5. Occupational
6. Vernacular	6. Self-contained and Local

The match-up here is not really as good as the terminology suggests. The use of foreign languages to prepare students for international examinations, provincial for provincial curricula, and perhaps even vernacular languages for self-contained curricula sounds vaguely logical, but there is no reason to suppose that classical languages would be especially suitable for doctrinaire curricula (except in isolated cases like Arabic for Islamic school systems) or that official languages would be any more suitable for occupational curricula than national or foreign languages would be, and so on.

Although there is a certain parallelism between the language types and the curriculum types, as the above array indicates, this is obviously not strong enough to be of any use in defining the options ideally available to schools in deciding on the best media for instructional sequences aimed at specific examinations, at different levels of schooling or after schooling, and at specific curriculum goals. To cite just one consequence of this approach, a school which has to prepare its students for examinations at four different curriculum levels would have to consider seriously the option of quadrilingual education. Preparation for four curriculum levels by the same school is not uncommon, but instruction in four different language types definitely is. Full bilingual education is usually about as far as schools go in this direction.

4.5. General curriculum options

It will be useful to consider the options in general curriculum before proceeding to those of language curriculum. Let us start with a relatively simple situation found in many parts of the world: several different types of curriculum relevant to the same school, but with the language of the examinations being the same for all types. This is the situation in many American public secondary schools, for example. The United States has no federal school system, only state and local control, but certain privately organized national examinations (particularly the Scholastic Aptitude Test, which is used by many universities in the country to screen applicants) are so important to the reputation of the school and to the further education of its students that there is, in effect, a national curriculum in terms of our definitions.

The typical U.S. secondary school, therefore, must consider elements of three different curriculum types: local, provincial, and national. Specialized and tertiary institutions must also consider doctrinaire and occupational curricula. Since all of the relevant examinations are available in English (including civil service, medical, and bar examinations), all the media of instruction should likewise logically be English ones. In most American schools in which the majority or pupils are thought to be 'English-speaking' -- that is, their approximations to all oral English texts are thought to be rather close one -- monolingual education in English is clearly indicated and nearly always followed. In spite of this, there are many failures to meet the demands of the three curricula (setting aside the doctrinaire and occupational curricula), and at least some of these failures are due to reading deficiencies which persist right up to the end of secondary schooling, as indicated in the following formula of channel distance:

$$\mathrm{NWi} - \mathrm{NRc} = 2 \text{ or more.}$$

In schools with Spanish-speaking majorities, on the other hand, English may still be the best media choice, from the point of view of general curriculum, but considering the distance between the oral English texts of instruction and the students' average versions of these texts, English may be a poor choice, as shown, for example, by the formula:

$$^{*}NSi - NUc = 3 \text{ or } 4.$$

Such great distances, of course, do not have to be tackled first at the secondary school level, but can be anticipated in primary school. If the distances persist at secondary school level, however, the options for schools with Spanish-speaking majorities are as follows:

a) Monolingual English education, despite the media gap
b) Monolingual Spanish education, despite the relevant examinations not being available in Spanish
c) Partial bilingual education -- some subjects in English and some in Spanish
d) Sequential bilingual education -- for example, early stages of instruction in Spanish, later stages in English
e) Translingual education -- for example, written media in English explained orally through Spanish
f) Full bilingual education

Assuming that the administrators of such schools have no constraints in the choice of media other than the three types of curricula and the linguistic capabilities of the school population (which is almost never the case -- see 4.7.), which of these options is theoretically the best one? The two monolingual options, a) and b), can probably be ruled out. The media gap which has not closed by the time of entrance to secondary school may be partially closed during the three or four years of additional instruction in English, in option a), but knowledge of examinable subjects is sure to suffer while it is closing. In option b), no matter how strong the English language courses are, they cannot be expected to close the gap by themselves, without any support from English media of instruction; the result will often be that the students know the examinable subject matter but are unable to express it in English on actual tests.

Some form of bilingual education is probably the best option (but even this kind of solution should have been begun earlier, somewhere in primary school). Partial bilingual education, option c), with Spanish used for the examinable parts of the total school program (the curriculum proper) and English for the non-examinable parts, so as to build up language proficiency without damaging comprehension of essential subject content, is a theoretically attractive solution. By now it is probably too late for option d), sequential bilingual education, to succeed. Some form of translingual education, option e), will probably take place anyway if there are Spanish-speaking teachers in the school, no matter what the authorities have planned.

It is the last option, full bilingual education, with constant alternation of English and Spanish in *both* oral and written channels, which is theoretically the most attractive. But this option is hardly ever practicable, because of limitations of teachers' linguistic and communicative competence (see also 4.7.). In the long run, questions like these, concerning the optimum media choices in schools such as the one in our example, can only be answered by mounting pilot school projects and initiating research involving experimental and control schools or school populations.

Turning now to a more complex, but still typical, situation involving at least bilingual and possibly multilingual options, let us consider briefly the case of the Singapore educational system. Singapore is a member of the British Commonwealth and of the Association of Southeast Asian Nations (ASEAN). It is a small island nation with a centralized public school system, exhibiting few local differences, and three public institutions of higher education (including one university). The curricula of the educational system are therefore principally international and national in character, with some elements of doctrinaire and occupational curricula at the higher levels of schooling. The doctrinaire and occupational schools proper, however, are controlled and supervised by the government, and private education is not really a factor in Singapore.

The national language is Malay -- it is *NL for most schools and classes, but NL in those few schools where it provides the actual media of instruction. There are three other official languages: Mandarin (Chinese), English, and Tamil. All three OL, like the NL, are used as media of instruction in schools bearing designations corresponding to the media: Chinese-medium, English-medium, and Tamil-medium. The English-medium schools presently account for almost 90% of the school population. Although there are many households that use English exclusively, English is nevertheless *OL in most schools and classes. Mandarin is not considered a 'home language' in Singapore either, although at least 75% of the school population speak related languages/dialects at home; many Chinese-medium schools, in fact, contain majorities of a single dialect/ language such as Hokkien, Cantonese, or Teochiu. Depending on the genetic classification of these speech varieties in relation to Mandarin (that is, their language variety distance from Mandarin), the media of instruction in Chinese schools are either OL or *OL. Tamil is OL in some classes and schools where it is relevant, *OL in the remainder.

The media of examination that apply to international and most national curricula in Singapore are forms of spoken and written English, mainly the latter; only a few national, doctrinaire, and other curricula are still examined in the other media. Entrance to all the higher education institutions is now prejudiced in favor of those students who know English well (although there is also a 'second language requirement' to confuse matters further). Given the fact that very few students speak English at home, the distance at the beginning stages of education between English-medium texts and students' versions of them is normally on the order of 3 to 4. Since there is no way to avoid the use of English media at the higher levels of education (in fact, from secondary school onward), English is included in the program of all schools, either as the medium of instruction ('first language') or as a subject ('second language', in Singapore terminology). The available options are therefore as follows:

a) Monolingual education in four streams: English (*OL), Mandarin (OL or *OL), Malay (NL or *NL), and Tamil (OL or *OL)

b) Bilingual education of some kind, always involving English as one of the media of instruction
c) Multilingual education.

The model presently adopted by the government of Singapore is actually closest to a), although it is called 'bilingual', referring to the occurrence of a 'first language' and a 'second language' in all the monolingual streams. (It is believed that a strong 'second language' curriculum, in a language variety different from the medium of instruction, will result in some kind of bilingualism for all pupils; this has proved to be an unwarranted expectation.) Since the English stream is by far the largest, however, the great majority of students do in fact undergo a form of bilingual education in an unofficial way. Most of the students in the English stream are speakers of Chinese 'dialects' (and not of *OL Mandarin, which they study as a required subject), so that the most typical schooling starts with full bilingual or translingual classroom instruction which gradually becomes monolingual (English oral and written media only). The primary school teachers, most of whom are products of a similar education system, are quite capable of handling the transition from 'dialects' to English.

This pattern of full bilingual or translingual primary education is not officially recognized, however, because the 'dialects' are discouraged, even in the home domain, by the official language policy of Singapore. 'Dialects' are not supposed to be used at all in schools, even on playgrounds (there is also a fear of competition with *OL Mandarin involved here, since the varieties are closely related to it). What actually happens in the early years is that the English written and/or oral media are explained through one or more of the Chinese oral varieties -- usually Hokkien, but in schools with high concentrations of single-variety speakers also Cantonese, Teochiu, and other 'dialects'. The result is constant alternation between the VL and *OL types until the distance between the texts of general (and language) curriculum and the students' versions of them becomes close enough to switch to true monolingual education.

A similar model, involving translingual education, applies to the dwindling 'Chinese' stream in Singapore.

Here, the alternation is between written Mandarin and one of the oral VL varieties until such time as monolingual Mandarin education becomes possible. The role of the opposite OL or *OL in both Chinese and English streams is also the same: It is taught as a required subject with no particular attention to general curriculum demands (only to language curriculum demands) in the later stages of education. University entrants, for example, are expected to achieve high marks in both languages, regardless of the stream they followed. In Singapore, only in the Malay (NL) and Tamil (OL) streams is there likely to be true monolingual education in the early stages; both these streams are barely trickles, however, in terms of the total school population. English is a required subject in these streams as well, but it is always *OL and not much achievement is possible unless the pupil switches early to the English stream.

The actual practice in Singapore schools, therefore, does not reflect a careful consideration of all the options. For example, sequential bilingual education could be the pattern in all four streams. Existing teaching staff is quite capable of it, and only curriculum development would be necessary. Instruction in the language medium most familiar to the majority of pupils in a given school or class could go through a translingual or full bilingual stage to a final stage of that form of monolingual education which would best serve the needs of the students at the end of secondary education -- usually English, but in some cases also Mandarin or Malay. As in the case of the U.S. schools with Spanish-speaking majorities discussed earlier, the best form or sequence of bilingual education could only be determined by experimental research in pilot schools. Theoretical considerations alone will not give reliable answers to the questions involved.

Finally, an example of a situation in which the multilingual option cannot easily be avoided is provided by schools in many parts of the Philippines. The general curriculum types occurring in most Philippine schools (public and private) are local, provincial, and national, but doctrinaire, occupational, and international curricula are also relevant to many schools. The national language is Pilipino (or Filipino), which is based on Standard Tagalog. This means, at least for the present generation of schoolchildren, that it is likely to be NL only in the Tagalog-speaking areas, *NL elsewhere. The national, occupational, and international curricula require the use of English media in schools at almost all levels. English can be either OL or *OL in any given school or class (there are a surprisingly large number of English-speaking households), but the schools in which English is OL are not necessarily the same ones where Pilipino is *NL. In other words, there are many schools where the channel distances may be very great for *both* Pilipino and English in the early stages of education.

Provincial and local curricula do not make very heavy demands on vernacular languages. Eight major VL (or *VL) and many more minor VL media occur in schools outside the Tagalog-speaking areas, in various forms of sequential and full bilingual education, mainly at the primary school level. Some levels of language curriculum still required Spanish which is usually a true FL rather than *FL, but this 'third' language does not figure in general curriculum to any extent. (Spanish ceased to be a mandatory subject at the tertiary level in 1987.)

Recent educational policy in the Philippines (since 1974) stipulates partial bilingual education in NL and OL for all schools: science and mathematics in English, other subjects in Pilipino. Even if partial bilingual education were not the policy, however, it is difficult to see how multilingual education could be avoided in schools where VL is the majority pattern. Preparation for general curricula in only one other language type, whether NL or OL, would not be satisfactory for students who reach the higher levels of education. Again, the optimum patterning and sequencing of the multilingual education required cannot be predicted on theoretical grounds alone.

In the Philippines, fortunately, linguists, language planners, and sociolinguists have long been aware of the issues and options described above. Many experiments have in fact been conducted in Philippine schools and provincial school systems, and other ongoing research may yield further answers that have implications not only for the Philippines but also for other countries with similar curriculum levels and patterns of societal multilingualism.

4.6. Language curriculum options

If the general aims and specific objectives of language curriculum (and of language instruction) were limited to reducing channel distances between instructional texts and students' versions of them, the options in language curriculum would be relatively straightforward. An analysis of language needs at every level of general curriculum for every kind of class in the school, based solely on media and channel considerations, would result in a more or less logical sequence of language instruction geared to those needs. The only constraints on the planning of language instruction would then be those common to the entire curriculum and instructional programs: time and cost constraints, availability of materials and teachers, and so on. Given an assessment of each class's average proficiency in the relevant media at each level of schooling, and the distribution of oral and written texts in that medium in the general curriculum for that level, an optimum program of language instruction could always be designed.

Language curriculum types are roughly the same as general curriculum types with regard to the levels at which they occur – that is, there are international, national, provincial, local, doctrinaire, occupational, and self-contained language curricula. The aims and specific objectives of language curricula which we find in school systems all over the world, however, sometimes have very little to do with general curriculum requirements. To give just two examples: a) The emphasis of a given required language course (examinable, and hence part of language curriculum) may not produce any measurable reduction of channel distances in the corresponding language medium, even when the language type concerned is a primary medium of instruction in the same school; or even worse, b) the language variety which is the subject of the required course may not occur at all as a concurrent or future medium of instruction and may not even have a well-defined role in the society where the school is located. In the second case, a language subject may have been put into the curriculum for cultural, political, religious, or other reasons which no longer exist (for example, Latin as a *required* subject in American secondary schools in the first half of this century).

Unless one is in the position of being an educational planner or policy-maker, however, it is futile to argue with the aims of language curriculum. Just as in the case of general curriculum, we would do well to assume that those who establish the aims (and the examinations which measure the degree of attainment of those aims) know what they are doing. This brings us naturally to another aspect of the relation between language and general curriculum which is worth discussing. As we have seen in the previous section, a determination of the optimum mix and timing of general curriculum media is not always easy to make, at least without benefit of educational research and experimentation. Even when the determination appears to be easy, a different pattern of monolingual, bilingual, or multilingual education may be imposed on the school system for reasons which have nothing to do with logical priorities. These reasons are likely to be of the same nature as the reasons for which the aims of the language curriculum are fixed: cultural, political or religious.

Bilingual education, for example, may be imposed on a school system in the belief that it will promote language maintenance, or preserve the ethnicity of a minority group scattered throughout the school system, despite the fact that no important examinations are held in the minority language and that no jobs can be obtained by virtue of special proficiency in it. Political or religious indoctrination may be conducted in the language media most closely associated with the source of belief (e.g. Russian, Arabic) even when the majority of students, excluding those who will become the political and religious teachers and leaders of the future, will have no further use for the language type concerned. Such impositions, in turn, will have their effects on the feasibility of language instruction.

We must always be careful to distinguish, therefore, between the options in language and general curriculum *choice of media* and *required subjects*, on the one hand, and the options of *implementation strategy*, on the other. By 'choice' is meant that policy decisions about media and channel emphasis and about language curriculum have not yet been taken, and that the inputs of linguistics, psycholinguistics, and sociolinguistics can still have an effect on such decisions. By 'implementation strategy' is meant that the important decisions have already been taken (with or without professional advice on the linguistic aspects) and the options are now limited to the framework provided by these policies.

In the case of general curriculum, our interest must largely be confined to options in choice of media, because once these decisions have been taken we will have little to say about implementation -- the strategies of general curriculum implementation being well outside the scope of this book. In the case of language curriculum, however, our main concern will be with strategies of implementation, and especially with the problem of matching the demands of language curriculum proper with the kinds of language instruction necessary to close the channel distances in the school media -- that is, how best to coordinate the requirements of language curriculum with those of general curriculum.

We approach the linguistic aspects of the medium of instruction in schools from both ends, as it were: a) If the channels, texts, and media of instruction in general education are already fixed or 'given', we try to see how language instruction can be tailored to support them; b) if these factors are still open to change, we examine the ways in which they can be adapted to fit an existing language curriculum. In the rare case where both the language and general curricula are open to change, the best procedure will be to fix the general curriculum first (a more difficult undertaking usually requiring experimental research) and then proceed to match language instruction and language curriculum as closely as possible.

To sum up, the options in language curriculum mainly have to do with implementing language instruction in such a way that the results will support both the language curriculum and the general curriculum as much as possible. In the case where a given subject in the language curriculum has no conceivable relation to the general curriculum in the same school, we will have to look outside the school for possible uses of the language type concerned and design language instruction with those uses in mind. The ways in which the implementation of language curriculum can be researched and planned, in fact, becomes the most important topic of the rest of this book.

4.7. Constraints on media choice

There are factors in every school situation which serve to limit the options for language and general curricula, both from the point of view of the choice of possible media of instruction and from the point of view of implementation strategy. The problems of implementation concern language curriculum more directly than general curriculum, whereas the choice of media has more serious effects on the latter. We will consider the set of factors that limit the options for media choice in this section, and the factors that limit implementation strategies in the last section of the chapter.

The choice of particular language types to furnish the media of instruction for general curriculum in a school or school system (and quite often also to become the subjects of language instruction and/or components of language curriculum) is constrained in many different ways. The following are perhaps the most common and serious constraints on media choice:

1) Student attitudes and motivation with regard to particular language types;
2) Teachers' linguistic and communicative competence in particular language varieties, and their attitudes towards these varieties as language types;
3) The availability of textbooks, aids, and reference materials in the relevant language types;
4) Non-educational policies of the government, or aspirations of the society at large, with regard to language choice and use.

In connection with the first kind of constraint, the language type which is best suited to be the medium of instruction for the most subjects at a given level may meet with so much resistance from students that it becomes a bad choice for that reason alone. The source of resistance can be a negative attitude toward the language itsef -- for example, a denigration of a particular *NL or *PL (which the students do not speak at home) on the grounds that the language is useful only in the marketplace and is unfit for serious education or communication. Or it can be a simple lack of motivation to learn or use the language, as in the very common case of the *NL or *OL for which the language variety distance is very great with respect to the students' common PL or VL and which is hardly heard or seen outside the school walls.

Especially in the early stages of instruction, pupils are easily influenced by home and peer attitudes toward language types, and they are too young to have much appreciation of the long-term effects of their education, or a clear view of their own employment prospects outside the home community. These factors can be powerful deterrents to successful acquisition of the language type chosen as the school medium of instruction, and especially so when this is an 'asterisked' type (*NL, *PL, *OL, etc.). The attitude of parents toward language types and their role in the motivation of schoolchildren must also be considered here. Parents may fear, for example, that any FL (even if it is only a resource language and not an actual medium of instruction in the school) is likely to erode the cultural background or ethnicity of their children in mysterious ways. Or they may believe that some VL or *CL will have an opposite, salubrious effect on cultural values and ethnicity.

A kind of motivation for language learning, of course, is always provided by the very selection of a particular language type as a medium of instruction or as a required subject of study. If the language type concerned is also included in the formal language curriculum, this built-in motivation is usually increased, simply because of the impending tests and examinations, and parental pressure is almost certain to encourage as much achievement in the language as in the general curriculum subjects. But the combined effect may still not be strong enough to counteract negative attitudes pervading the community in which the school is located and the lack of instrumental motivation furnished by the larger community or nation. This situation typically occurs in rural communities where schools are subject to national or international curricula, and in urban communities where provincial or local curricula are involved. It usually affects both the oral and the written media with equal force, and diminishes the rate of language learning in the corresponding language type through direct instruction.

The second kind of constraint on media choice, teachers' linguistic and communicative competence and their attitudes toward language types, can also be a powerful constraint, and it is the *oral* channels of the media that are most affected. Here the language type that can best provide the medium of instruction at a given level may be ruled out simply on the grounds that there are not enough teachers of the subjects concerned who are proficient in the oral (or written) medium required. This situation can, of course, be remedied over time by training, retraining, or attrition of the teachers concerned, but in the short run it can create almost insoluble problems of implementation, both in general and in language curriculum.

Teachers' *attitudes* towards certain language types, which may or may not coincide with those found among pupils and parents, can easily frustrate the educational authority in its attempts to establish a new medium of instruction and to train or retrain them to teach in that medium. Teachers are, after all, products of educational systems themselves, and bring with them to their occupation whatever attitudes and competence the previous educational experience has fostered in them. If a teacher has no respect for a medium of instruction or a language subject (even one he is fully competent to teach), this attitude quickly communicates itself to the students, whose own attitudes and motivation will inevitably be affected.

Thus an otherwise desirable option for changes in the medium of instruction, or for corresponding changes in language instruction and language curriculum, can be constrained by the feasibility of hiring or producing enough teachers with the requisite linguistic and communicative competence. If teachers' attitudes toward the new medium or subject are negative, moreover, the written as well as the oral channels of the language type concerned will be affected.

The third kind of constraint on media choice, the availability of textbooks, aids, and reference materials in the relevant language types (already mentioned briefly in 1.3.), also involves implementation problems which can be solved over time, but which in the short run may constitute the most powerful constraint of all on media choice. It applies particularly to the *written* channels of the media of instruction, less so to the oral channels and to language curriculum materials. At the lower levels of education, it is relatively easy to produce textbooks and teaching aids in a new medium. It is relatively easy to produce materials for language instruction in a new language type at any level. But for the higher levels of instruction in non-language subjects, reference materials become increasingly important, and if the language medium selected to provide instruction in a given subject is not rich in written reference materials (for example NW or PW) it is very difficult to build up library stocks, journals, and bibliographical materials except over an extremely long period of development.

This state of affairs in turn constrains the choice of written media and the components of language curriculum at prior stages of education, and often results in a vicious circle: Journals and library collections in the NW, PW, or VW remain depleted because scholars have not been trained to write in these languages. Even those who are capable of doing so may prefer to write in a FW or OW medium of wider communication simply because they are thus assured of a wider readership and academic reputation, and so on. It takes a determined and powerful educational authority, with plenty of money to spend on curriculum development, to overcome the constraints of the availability of textbooks, aids, and reference materials in a new medium of instruction proposd for school systems.

The last type of constraint, the non-educational policies of the government or the aspirations of the society at large with regard to language choice and use, is in one way or another related to all of the first three constraints. An extensive example has already been cited in which a government (Singapore, 4.5.) has tried, somewhat unsuccessfully, to overcome this type of constraint. A different sort of example is provided by Canada, where recently the political (and social) objective of making French an alternate *NL, promoting it beyond its present role as PL, has resulted in some experiments in using French as a medium of instruction in schools where English would be the more logical choice, and efforts to include French in the required language curriculum of schools where there is little motivation for learning it. Language maintenance, like its opposite number, language suppression, is often a social and political issue which has little to do with optimal media choice in educational systems as such. But to the extent that such issues have effects on language attitudes of administrators, teachers, pupils, and parents, and on the availability of instructional and reference materials, they do constrain the options in media choice and language curriculum subjects.

4.8. Constraints on implementation

Besides the constraints already touched on in the preceding section, there are other factors which limit the options in implementation strategy, especially in terms of language instruction and curriculum but also to some extent in terms of general curriculum. These are essentially channel and text constraints, because they apply no matter what language types are dictated by educational policy.

All of the factors discussed in the preceding section, of course, have their counterparts as constraints at the implementation level. If students have bad attitudes and poor motivation with regard to the language subject (4.7.1), steps have to be taken to improve their attitudes and motivation. If teachers are not linguistically or communicatively competent in the desired language type (4.7.2), they have to be retrained or replaced. If textbooks, aids, and reference materials are insufficient in the chosen medium (4.7.3), they have to be developed. And if the educational policy with regard to language runs counter to non-educational government policy or social aspirations (4.7.4), at least some explanation of the rationale behind the medium choice is due the public, and so forth.

The additional constraints, which may pertain even when the first four do not, are also of four general types:

5) The aims and objectives of the language curriculum itself;
6) Linguistically heterogeneous classes;

7) The degree of fit between oral and written texts of the same language type;
8) The availability of *authentic* general curriculum texts to base language instruction on.

Constraints of type (5) have already been extensively discussed in 4.6. and other sections of this chapter. The essential point is that the aims and objectives of language curriculum may be to some extent incompatible with those of general curriculum, or they may be so vague that the intelligent design of language instruction becomes extremely difficult (see also Chapter 11).

Linguistically heterogeneous classes (6) are common throughout the world, and are by no means limited to schools with bilingual or multilingual patterns of education. Even the most monolingual of schools (from the point of view of the common medium of instruction) may contain classes in which students speak many different language varieties at home. Heterogeneous classes pose problems of implementation regardless of media choice. An example of an extreme case of linguistic heterogeneity is found in the municipal school system of Bombay, where up to 14 language varieties may be spoken at home by pupils in the same class.

In such cases, the choice of a single language medium of instruction is dictated, unless some kind of individualized learning model can be provided and sustained. In other, milder cases of heterogeneity, the single language medium may have been imposed, or some form of bilingual education provided, for various reasons discussed in the preceding section. But whatever language type or types are selected to become the media of instruction, it sometimes happens that these media are equally distant for nearly all students. On the other hand, the longer a multilingual pattern of education is maintained, the more difficult implementation becomes, because of the increasing scarcity of appropriate teachers and instructional materials as the students move up the educational ladder.

A classic case of linguistic heterogeneity in a monolingual form of education was that found in the United States in urban school systems during the period of massive immigration from Europe, in the early part of this century. English was the only possible option as the medium of instruction, as far as school administrators and policy-makers were concerned, and they made the 'melting pot' strategy work (but at what social and educational cost, we will never know). More recently, a somewhat similar situation in Australia is apparently being handled differently, with bilingual options being possible because of greater concentrations of speakers of single non-English varieties in school districts.

In milder cases of linguistically heterogeneous classes, although the choice of instructional medium may not be so difficult, the problems of implementation tend to be different but equally serious. The typical case can be represented by this formula of channel distance:

XSi - XUc = a range of 1 to 4

Both the language teacher and the general teacher have to cope with this range of oral channel distance within the same class (c). Such a range usually results from differences in oral versions which pupils bring with them to school, rather than from their language experience after they have arrived. The school may be too small to allow for separation of students according to language proficiency, so that both good and poor users of X wind up in the same class.

Some students will be thoroughly familiar with the relevant oral medium through having heard or spoken it at home, others will be partly familiar with it as used in the community at large, and still others (especially recent arrivals) will be quite unfamiliar with the oral medium. This type of situation is found, for example, in the first year of small lower secondary schools in Malaysia, where the same class may have the following channel distances represented in it (*g* stands for a group of students smaller than a class):

a) NSi - NUga = 1 (native speakers of Malay, the NL)
b) NSi - NUgb = 2+ (non-native speakers of Malay whose primary education was in Malay)

c) NSi - *NUgc = 3+ (non-native speakers whose primary education was in Mandarin or Tamil)

In such linguistically heterogeneous classes, the teacher has only three basic implementation strategies for both language and general curriculum instruction of the whole class. He can aim his oral presentation at those who are already proficient in the oral medium, and let the others keep up as best they can. He can aim his presentation at the lowest level of proficiency, at the risk of boring the rest of the class and retarding their learning process. Or he can try to strike a happy medium of some kind. These three options are equally unsatisfactory, for various reasons. A fourth strategy becomes possible only if the teacher is able to manage the class in such a way that oral peer teaching takes place, in groups which consist of representatives of all proficiency levels. This strategy is applicable in both language and non-language instructional sequences, but may require retraining of teachers and sometimes special instructional materials as well. Thus the existence of linguistically heterogeneous classes always poses some kind of problem in implementation.

Constraints of type (7), the degree of fit between oral and written texts of the same language type, are a problem in many schools -- for example, in those which feature one of the established 'world languages' as the principal medium of instruction and/or required language subject. Languages such as English, Mandarin, Spanish, French, and Arabic are used by such a wide range of speakers, both geographically and socially speaking, that variation in oral channel use is considerable. This range of variation exists not only in the speech of teachers and pupils, but also in recorded and broadcast channels such as those of pre-packaged tapes and radio programs. While the corresponding written channels of these widely-used language varieties are well standardized and virtually interchangeable from one part of the world to another, the oral channel uses are not.

Even when all students in a given class are more or less equally proficient in the oral version of the medium used by their own teachers, the variation in spoken world languages is so great that there is little chance that the teachers' oral versions will match closely the standard written language of textbooks, teaching aids, and reference materials, unless the latter are produced locally. To make matters worse, all of the languages mentioned above as examples (except Spanish) have cumbersome, illogical, tradition-laden writing systems which do not fit any oral version of the language very closely. Thus texts which are comprehensible to students in their oral version may not be comprehensible in their written version, and vice versa.

In the case of other national, provincial, and vernacular languages, and especially when the written languages have recently been devised, reformed, or standardized and the literature in them is fairly new, the fit between oral and written media is apt to be much better, but it is never perfect. We will later refer to this general lack of fit as *literacy distance,* a concept which is further explored in Chapter 7 in the general context of reading. (The concept is too complex to be explored further here.)

The last type of constraint on implementation, the availability of *authentic* general curriculum texts to base language instruction on (8), is basic to many of the concerns of this book. While written texts relating to general subjects, such as basic textbooks in the natural and social sciences, the arts and humanities, and reference works on these subjects may be readily available, a true sampling of the texts -- one which will reflect their actual relevance to instructional sequences -- is often difficult. Authentic oral texts, on the other hand, are almost never available unless they are recorded in classrooms and laboratories by the designers of language instruction, but once recorded they are more apt to be truly representative of the style of instruction.

The collection, analysis, and use of authentic instructional texts of general curriculum is theoretically desirable, in the process of developing language instruction which immediately precedes students' exposure to the general subjects concerned, no matter how well establishd the medium of instruction is, or how commonly it is taught as a language subject. The design of the corresponding component of language instruction sequences presumes that some sort of *needs assessment* (see 11.3.) has been carried out. If the oral and written texts on which the needs analysis must be based are not easily available, this constitutes a constraint on implementation which is potentially as serious as the others mentioned in this section.

We conclude here the presentation and discussion of the topics relevant to this book. In the remaining eight chapters, comments are made which relate in one way or another to the texts and channels of instruction, the language media and subjects in all their varieties, and the linguistic options in language and general curriculum.

CHAPTER 5

LANGUAGE ACQUISITION OUTSIDE THE LANGUAGE CLASS

5.1. Types of skills acquired
5.2. Communicative contexts
5.3. Pronunciation, vocabulary, and grammar
5.4. General curriculum areas
5.5. Language form and function
5.6. Socialization
5.7. Individual experience
5.8. Language proficiency

A distinction has already been made (at the end of Chapter 1) between language curriculum and language instruction, on the one hand, and between language learning and language acquisition, on the other. This chapter comments on language acquisition which occurs in schools independently of both language instruction and language curriculum -- or, to put it more succinctly, 'outside the language class' (but still inside the school). Language acquisition has been defined as any gain in language proficiency which takes place without apparent conscious effort on the part of the student or learner. To underscore the fact that language *proficiency* may be acquired as well as learned, a definition of this term is included at the end of the chapter.

In Chapter 6, we will be commenting on the opposite side of this same coin: those aspects of general curriculum which may be acquired (or learned) as the result of language instruction and language curriculum. The two sets of comments will hopefully provide us with a basis for exploring in detail the relation between language and general curriculum in subsequent chapters.

5.1 Types of skills acquired

The traditional way of looking at language proficiency is to make a four-way distinction among the 'language skills'. In our previous discussions of language competence and the individual or class versions of the media of instruction, we have adopted exactly this approach. In the formulas for measuring channel distance of the last chapter (4.3.), for example, the symbols W and S were used to represent the written and oral channels respectively, and the symbols Rc and Uc to represent class approximations of what comes through those channels, or collective student versions of the texts concerned (in effect, the class's average competence in the skills of reading the written language texts and understanding the spoken language texts presented by teachers and instructional materials). These same symbols could also be applied to individual proficiency in the four language skills, simply by adding a lower-case *p* (for pupil) to the capitalized symbol, in place of *c* (for class). The four individual skills pattern as follows:

Generalized Channels	Active/ Productive	Passive/ Receptive
Oral language Skills:	Sp (speaking)	Up (understanding)
Written language Skills:	Wp (writing)	Rp (reading)

Two additional skills are sometimes added to these four traditional components of language proficiency: the skills of translating and interpreting from one language to another. In our terms, however, these skills always involve two or more language types, so that a single symbol will not suffice to designate them. If we let *X* stand for one language type and *Y* for a second type, and use an arrow to indicate the direction of translation or interpretation, we will find that there are four (not two) skills involved, namely:

(1) 'Interpreting' $XS \rightarrow YS$ or $YS \rightarrow XS$
(2) 'Translating' $XW \rightarrow YW$ or $YW \rightarrow XW$
(3) (No name) $XS \rightarrow YW$ or $YS \rightarrow XW$
(4) (No name) $XW \rightarrow YS$ or $YW \rightarrow XS$

Although the skills numbered (3) and (4) above have no common terms to designate them, there are actual contexts in schools in which they become relevant. A student taking notes in a national language (N) on a lecture delivered in a foreign language (F), for example, would be symbolized as:

$$FS \rightarrow NW$$

A teacher or student explaining orally, in a vernacular language (V), a text written in a provincial language (P) would be symbolized as:

$$PW \rightarrow VS$$

These examples both commonly occur in translingual education.

The actual processes involved in translating, interpreting, and the other two unnamed related skills are, of course, much more complicated than these formulas would make them appear, and they always demand an individual competence in both languages concerned. In translating a foreign-language mathematics text into a national language, for example, the translator's competence is involved at three different steps, only one of which is commonly called 'translating'. We can demonstrate this through the following formulas, in which t stands for 'translator' and m for mathematics' -- or, more properly speaking for the mathematical content of the written text:

First step: $\mathrm{FWm} - \mathrm{FRt} = \mathrm{FRm}$

Second step: $\mathrm{FRm} - \mathrm{FNt} = \mathrm{NRm}$ ('the translation')

Third step: $\mathrm{NRm} - \mathrm{NWt} = \mathrm{NWm}$

At each one of these steps some loss or change of content is inevitable. At the first step, the translator must convert the mathematical content written in the foreign language into his own understanding of it as so written (FRm); the loss or change here will be due to his reading competence in that language (FRt). At the second step, the change of language media of the mathematical content is also affected by the translator's general competence to translate from the foreign language to the national language (FNt). At the third step, this passive national-language version of the content must be put back into active form, and this process is subject to the translator's competence in writing that language (NWt). Sometimes the loss or change, at any of these steps, can be compensated for by addition of elements not in the original text, depending on the ingenuity of the translator.

As far as the unnamed translingual skills are concerned, there are additional steps involved. In the earlier note-taking example, the student who is converting a spoken foreign-language text into a written national-language text has two possible routes to follow: a) He can convert his version of the foreign text directly into a comparable 'heard' version in the national language and then, in two steps, convert this version into writing, or b) he can 'visualize' the original oral text in foreign written form, and then follow the normal translating steps, as above. In either case, there is an extra step involved, with more opportunity for loss and change of the original text, as well as for compensatory additions to it.

Although the skills analysis of language proficiency has certain obvious applications to our central themes, and seems superficially to be useful in handling both channel distance and language variety distance (see Sections 3.7. and 3.8.), it actually accommodates only one dimension of what we would like to call language proficiency. As we shall see later in this chapter (5.3. and 5.5.), there are other dimensions to consider. The skills approach, nevertheless, will be very useful in the analysis of communicative contexts within the school, since these contexts typically involve many different channel and media combinations.

5.2. Communicative contexts

A first step toward exploring the acquisition of language outside the language classroom will be to delineate the contexts within the school where communication takes place through the use of some language variety or other in some channel. 'Contexts' here refers to the participants in communicative acts and events as well as to the places where the acts and events can occur. There are four principal types of contexts in the typical school:

	Participants	Places
(1)	Pupils and teachers	Mainly in classrooms
(2)	Pupils and their peers	Mainly outside classrooms
(3)	Pupils and teaching/materials learning	Classrooms, libraries, laboratories, etc.
(4)	Pupils and other verbal stimuli	Anywhere in the school

Contexts of all types which occur during formal language instruction, or as the result of assignments by language teachers or students' own efforts to meet the demands of language curriculum, are excluded from consideration.

For example, when a language teacher lectures, conducts a drill, divides her class into groups for peer interaction, or gives individual assignments for work in the library or language laboratory, such activities are considered language instruction *per se* and are excluded. Our interest here remains focused on language acquisition outside the language class, and therefore category (1), 'pupils and teachers', refers to general subject teachers.

Pupil-teacher interaction of some kind typically occurs in all non-language subjects, and much of the communication during this interaction tends to be confined to the prescribed oral and written channels of instruction, and especially the oral channels of some school language variety. The nature of this linguistic communication varies from subject area to subject area (see 5.4.), but a common characteristic of all pupil-teacher interaction, from the pupil's point of view, is emphasis on the *passive* or *receptive* skills in the oral media (Up) and on the *active* or *productive* skills in the written media (Wp). The reasons for this distribution of skills emphasis stem from purely mathematical constraints of the typical classroom. When a single teacher is dealing with 30 students for a 45-minute period, for example, each student will get a *maximum* average of 1 1/2 minutes of individual oral production time per period, even if the teacher does no talking at all. On the other hand, every student may be exposed to up to 45 minutes of teacher talk per period.

The opposite emphasis, on the written channels, is also possible in many typical non-language subject areas beyond the initial stages of education. Teachers often do not feel that they are doing their job if they merely write on the board or otherwise display written texts during the class period, for students to respond to in some way. Hence the exposure to teacher-directed or teacher-produced written-channel material tends to be less than exposure to the corresponding oral-channel material in the typical class. On the other hand, teachers can and do give written assignments to individuals, groups, and whole classes, to be performed by students both inside and outside the classroom. If the teacher also finds time to read and comment on these assignments, then the written-channel communication circuit is closed and a form of interaction has taken place between student and teacher.

The writing assignments may, of course, involve some reading or listening as well, but this interaction takes place in other contexts. The essential factor here is active use of the written channels, usually in the language medium prescribed for the subject in question, resulting in some kind of product which the teacher will presumably evaluate in some way. Thus the emphasis, if not the actual distribution of student time, is on the productive rather than the receptive use of the written media, insofar as the pupil-teacher context is concerned.

The second important communicative context is interaction among the students themselves, in what we have called the pupil-peer context. This occurs both inside and outside the classroom in the typical school, and may be teacher-directed or not. In either case, it heavily favors the development of the oral, as opposed to the written, modes of communication in various language types and varieties -- not all of which are necessarily school varieties used by teachers for instructional purposes. Students do pass notes to each other, of course, and occasionally engage in more formal modes of written communication with one another. But interaction among students of the same age-group, as well as among students of different age-groups in the same school, is overwhelmingly oral, even at the highest levels of education. To the degree that the preferred *media* of oral communication among students matches the oral media of instruction, peer interaction in the school favors the development of proficiency in the oral channels of these media. To the extent that the media differ, this development will inevitably suffer in some way.

As far as the productive versus receptive emphasis is concerned, the chances are that the development of these skills (for both oral and written channels) will be about equally balanced in communication among the same age-groups within the school. It will be slightly off-balance in communication among different age-groups, with the older students tending to be more active in their use of the channels and the younger students more passive in such interaction. In some schools the translingual skills, especially interpreting, are relevant to pupil-peer interaction, but as we shall see later (5.6.)

the typical patterns of socialization in schools actually inhibit the exercise of such skills.

The third and fourth communicative contexts in the school are closely related to each other, but potentially different in their channel (and language medium) emphasis. The third context involves the interaction of pupils with the actual teaching/learning materials of the school, and the fourth context their interaction with other available verbal stimuli -- e.g. literature in libraries for free reading, records, tapes, and non-educational television and radio, displays on walls and notice-boards, materials used in connection with extracurricular actvities. Because of technological and cost constraints, in the typical school the bulk of materials of both categories tends to be in written rather than oral form. Only in connection with language instruction and curriculum (which we have ruled out of consideration) is it usual to find taped or recorded materials available in any quantity.

Students' 'interaction' with both instructional and non-instructional materials, of course, tends to be passive rather than active. That is, they may take a few notes during their reading and listening, but if they respond otherwise to the stimuli it is usually in other contexts, either pupil-teacher or pupil-peer. With certain exceptions, such as school newspapers and dramatic performances, where productive language skills are explicitly developed, the passive aspect predominates, and especially the reading skill (Rp). In terms of educational levels, moreover, reading skills in various language types become increasingly developed as the student progresses up the ladder toward university and professional studies, owing to greater passive exposure to instructional and other materials in the written media. In many educational situations where the resource language (but not the medium) at these higher levels is a new language type (e.g. a foreign language), the skill of translation is often significantly developed by some students, who are then in a position to assist their peers in understanding the content of the new instruction.

We now summarize the four communicative contexts in terms of their potential effects on the language proficiency of students in typical schools, broken down by skills emphasis.

Contexts	Effects on proficiency in terms of skills
1. Pupil-teacher	Up affected more than Sp (Wp more than Rp)
2. Pupil-peers	Up and Sp equally affected (also Wp and Rp), but not necessarily in school language medium
3. Pupil-instructional materials	Rp affected more than Wp (Tp more than Ip)
4. Pupil-other stimuli	Same as 3, but not necessarily in school medium

The differences between contexts 1 and 2, and between 3 and 4, are most evident in schools where two or more language types are used for communication, either because some form of true bilingual education is practiced or because the linguistic background of the students themselves is diverse. The choice of media tends to be the same for contexts 1 and 3 in most subject areas at a given level -- that is, the language variety most common in pupil-teacher interaction in the formal classroom situation is also the variety found in the bulk of the instructional materials (except where translingual education is practiced or when instructional materials in the medium of instruction are unavailable). Likewise, the choice of language variety for contexts 2 and 4 is likely to be the same, whether or not it corresponds to any actual medium of instruction -- that is, the speech variety in which most students converse among themselves is likely to be related to the written variety in which most students choose to read when they are allowed a choice. For example, if a school library stocks books in both FL and NL, students who study subjects in FL but normally converse among themselves in NL are much more apt to choose novels, short stories, magazines or 'how-to' books written in NL, although they are obliged to read textbooks in FL most of the time. Obviously, this difference between the medium emphasis of instructional materials as opposed to other verbal stimuli available in the school affects the development of reading competence (e.g. NRp and FRp) in some way.

All these effects on proficiency in various school and non-school languages in terms of skills emphasis are, of course, merely generalized from observation of many different kinds of actual school situations. But this way of looking at language acquisition outside the language class, concentrating as it does on the channels of communication and the direction of flow along these channels (active and passive uses of the channels) as well as on the language varieties in which proficiency is being acquired, provides an interesting contrast with other ways of looking at language acquisition and language proficiency.

5.3. Pronunciation, Vocabulary, and Grammar

Another traditional way of analyzing the components of language proficiency is to make a three-way (or sometimes four-way) distinction among the linguistic features which are common to all four of the (monolingual) skills, instead of looking at each skill separately. Cutting across the active/passive and oral/written distinctions is a classification of certain (surface) features which are shared by all natural languages. The most common such classification recognizes three main categories: pronunciation, vocabulary, and grammar. Although this type of analysis of language proficiency, as practiced in connection with language and general curriculum, tends to be more practical than theoretical, the three categories do correspond roughly with components of language recognized by many descriptive and universal grammarians, as follows:

Practical Level	Theoretical Level	
Pronunciation (± spelling)	Phonology	(± Graphemics)
Vocabulary	Lexis	(± Morphology)
Grammar	Syntax	(± Morphology)

It is important to note, however, that the practical classification leaves out one important component which every theoretical grammarian must include in some way: viz. Semantics (± Pragmatics).

The reason for the omission of meaning (or intent) from the practical model is that the most easily examinable, or otherwise assessable, aspects of language proficiency are represented in those linguistic features which show up on the *surface* of writing and speech, and therefore are susceptible to being examined or assessed in terms of student *performance*. Semantic and pragmatic features of language, on the other hand, tend to have such indirect or inaccessible influences on students' actual written and spoken products, and on their comprehension of written and spoken texts, that it is difficult to assess the consequences of specific areas of knowledge or ignorance of the semantic and pragmatic systems of a particular language in the same way that knowledge or ignorance of specific pronunciation, vocabulary, and grammar areas can be assessed. Another way of putting this is to say that it is always easier to assess performance than it is to assess competence in a given language.

The distinction between language competence and performance remains a valuable one, but since our main concern here is with language acquisition outside the language class, priority must be given to the type of proficiency which can be measured through language tests that schools actually give, and not through the kinds of tests which they perhaps ought to give. These tests, and particularly the examinations most often associated with language curriculum, are generally limited to measures of separate skills and measures of familiarity with *discrete items* of pronunciation (plus spelling, for some languages), vocabulary, and grammar. So-called 'integrative' language tests exist, of course, and some of them do attempt to measure language competence rather than performance, but such tests require much more sophisticated techniques of design, administration, and interpretation of results than most schools and language teachers are equipped to handle. For this reason, we will confine ourselves for the time being to pronunciation, vocabulary, and grammar as components of language proficiency revealed through performance.

Pronunciation can be interpreted in at least three different ways:

(a) as a description (or prescription) of the sound system of a given language type without reference to any writing system which may be associated with it;

(b) as a description of the relation between the oral and written forms of a given language, going in both directions -- i.e. for the prediction of sounds from spellings, or of spellings from sounds;

(c) as a set of prescriptive rules for the manner in which any given graphic representation is to be rendered in speech, and/or the manner in which any oral form is to be rendered in writing.

Students' degrees of proficiency in any one of these versions of pronunciation can be measured directly from their performance on set tasks. Interpretation (a) is the most useful one for the pronunciation of oral versions of all language types, and when combined with interpretation (b), for written versions as well. For some written languages, such as Chinese, (b) is not feasible and must be replaced with (c). For many language types, in fact, where spelling as well as pronunciation has become a standardization issue, interpretation (c) is adopted instead of (b).

Vocabulary can be interpreted, in a common-sense way, as the inventory of language items which one would expect to find in a good, unabridged monolingual dictionary of a given language. Vocabulary thus would include not only individual 'words', but also non-transparent compounds and derivatives, set phrases and 'idioms', and perhaps some affixes (especially prefixes and suffixes) listed separately. Students' control of vocabulary, defined in this way, can easily be tested through performance, using a number of common techniques.

Grammar, finally, can be taken to mean any surface feature of a given language which is not already accounted for under the headings of pronunciation and vocabulary. Thus grammar would include such things as sets of related forms (paradigms); phrases, clauses, and sentence types and their constituents; word order rules and semantically transparent word-formation rules. Like the other two categories, grammar can be based on either descriptive or prescriptive models, and whatever the nature of the grammatical rules, the students' knowledge of them can be tested in terms of performance on specific tasks -- these tasks ranging from the recitation of the rules themselves to the application of the rules to structured problems in expression or interpretation of texts.

Other categories related to grammar and vocabulary, such as *discourse* and *stylistics*, are sometimes included in this type of traditional analysis. Otherwise, they are classified as partly non-linguistic categories -- e.g. 'rhetoric' and 'usage'. The simplest possible interpretation of discourse, in terms of surface features, is obtained by restricting the term *grammar* to syntactic features at the sentence level and reserving the term *discourse* for the cohesive features (syntactic or lexical) found in spoken and written texts consisting of more than one sentence. Although discourse features cannot be adequately described or prescribed (any more than syntactic and lexical features can be) without reference to semantic and pragmatic systems of the language concerned, this interpretation will suffice for the purposes of the present discussion. Similarly, the term *stylistics* can be understood as referring to variants in pronunciation, vocabulary, and grammar the choice of which is determined by non-linguistic considerations, such as the role relationships, topics, and locales of communication events.

Besides its inherent practicality, another advantage of our classification of language proficiency in terms of linguistic surface feature categories is that it allows us to speculate about the relationship of the acquisition of such categories to other kinds of learning through general curriculum, socialization, and individual development. In particular we can note the following tentative associations:

Linguistic Category	Development outside the Language Class
Pronunciation (and stylistics)	Socialization, extracurricular subjects)
Vocabulary (and stylistics	Individual experience, arts subjects
Grammar (and discourse)	Cognitive development, science subjects

These tentative associations are commented on further in the remaining sections of this chapter.

5.4. General curriculum areas

Just as language skills acquisition is affected by the communicative contexts of the school (5.2.), different subject areas in the general curriculum have different effects on the rates of acquisition of various types of linguistic features in a given medium of instruction. These effects can be considered independently of the oral/written and active/passive distinctions which we must make in exploring the communicative contexts, and related more directly to such categories as pronunciation, vocabulary, and grammar. The subject areas of general curriculum, as opposed to language curriculum and instruction, divide most conveniently into four main areas:

1. Science and mathematics
2. Social studies
3. Fine arts, religion, and acculturation
4. All other subjects

This classification is meant to be exhaustive; any non-language subject, whether or not it is examinable, can be classified in one of the areas. The first three areas are typical of general curriculum, and the fourth of extra-curricular subjects, but this difference does not hold equally for all schools.

Science and mathematics instruction, in any school language variety, puts heavy emphasis on certain kinds of linguistic features and neglects others. The vocabulary of science and mathematics, for example, is not like the vocabulary of other general subjects. It includes, to be sure, many precise technical terms which must be learned by the student, and many abstractions which are semantically difficult, but it also includes many references to concrete objects, and materials of everyday life, used as examples and frames of reference for the definition of concepts and the illustration of processes. The subject matter tends to be almost entirely descriptive, rather than narrative or hortatory, and this has its effects on the frequency of occurrence of linguistic features at every level: lexis, morphology, syntax, discourse, and stylistics (and of course semantics and pragmatics, if we include these levels). Good science teaching takes its examples, wherever possible, from the actual physical environment of the school and its students. There is no desire, on the part of mathematics and science teachers, to broaden this physical environment unless the extension of individual experience can somehow be utilized in the teaching of mathematical and scientific concepts. On the other hand, there is no assumption that the students know anything about the outside world and the universe until this knowledge has been built up step by step.

The emphasis in science instruction, and even more so in mathematics instruction, is on the *cognitive* aspects of language, rather than on the affective, experiential, and pragmatic aspects. In languages which have tense systems, for example, scientific and mathematical discourse emphasizes the present tense, and a knowledge of the other tenses is almost superfluous. In languages which have highly developed and regular numeral systems, operating in association with generic classifiers, quantity and frequency designators, the learning of mathematical concepts is greatly simplified; conversely, in languages which lack such systems, the subject matter requires a greater cognitive effort from the student. But the student may also acquire proficiency in the use of these linguistic features, easy or difficult though they may be, through learning *mathematics* rather than through language instruction; at the very least, the two kinds of acquisition/learning reinforce each other.

A highly-developed system of social levels inherent in some languages, on the other hand, may have no relevance at all for the student of science or mathematics. Thus the acquisition of certain features of language at the expense of others is encouraged by these subject areas, just as lack of proficiency in terms of these same linguistic features may be an effective barrier to the learning of scientific or mathematical concepts when the language medium is not well controlled by the student. Perhaps most important of all, a knowledge of the linguistic aspects of scientific discourse, rather than the mere ability to understand isolated sentences, is a tool which is probably better sharpened in this area of general curriculum than in language instruction.

The term *social studies,* designating our second general subject area, is meant to apply to such subjects as geography, history, civics, and current events, at the lower levels of education, and to such disciplines as economics, political science, sociology, anthropology, and psychology at the higher levels. Instruction in these subjects tends to emphasize linguistic features which are in some ways the opposite of those emphasized in science and mathematics. Here, the affective, experiential, and pragmatic aspects of language are often just as important as the cognitive aspects. The *vocabulary* requirements of the social studies, in particular, are much greater -- environments distant in time and space must be almost instantly reconstructed, and new terms or proper names must often be memorized out of context rather than being carefully built up step by step, as is done in science and mathematics.

The same tense systems and social levels of language which are largely irrelevant to science and mathematics discourses may become highly relevant in social studies. At the syntactic level, even the sentence, clause, and phrase types may be very different. Social science writing, especially in the higher academic disciplines, is characterized by much more complex sentence constructions (in English, for example, through various embedding techniques, and especially through the device of nominalization -- the present book is a good example of this syntactic style). But the *discourse* styles themselves, except perhaps for the degree of intended involvement of the hearer or reader, are not very different from those found in texts on the physical and life sciences.

The third general subject area, *fine arts, religion, and acculturation,* adds a new dimension to the linguistic features found in social studies and the social sciences. This dimension is an emphasis on the individual's relation to society, nation, and culture, as opposed to a mere accounting for societal, political, and cultural systems as wholes. It implies belief in, or at least understanding of, the values, religious tenets, and approved attitudes of the culture concerned. The linguistic devices useful in evaluation and criticism come into prominence alongside the devices useful in description, narration, and classification; argument based on beliefs is added to argument based on hypotheses, parable supplements example, and morals can be drawn as well as conclusions. The personalized narrative styles of literature contrast with the detached narrative styles of history and most kinds of biography, as do the conventional devices of drama with those of objective journalism.

In fine arts, religion, and acculturation, a new affective overlay is placed on purely expository techniques. This contrast is nowhere better exemplified than in the pages of a typical daily newspaper -- news stories are juxtaposed to editorials, gossip columns, film reviews, and sermons, and lists of commodity prices and stock exchange quotations are printed next to advertisements. Even when these functionally different parts of the newspaper are not labelled or distinguished as such, the experienced newspaper reader can always tell, from the language used, what kind of text she is dealing with. On radio and television, even small children quickly learn to distinguish different kinds of broadcast material, and they can often do so based on incomplete comprehension of the verbal text.

The lumping together of such disparate bedfellows as fine arts, religion, and 'acculturation' may seem at first glance peculiar from an interdisciplinary point of view, but it makes sense linguistically. Under religion, we can include such things as spirit worship, communism, Christian Science, and belief in the explicability of Unidentified Flying Objects, as well as the standard organized religions. Under fine arts, we can include criticism of music, dance, painting, photography, sculpture, drama, films, poetry, and prose as well as these arts themselves. 'Acculturation', though not a disciplinary term, is meant to cover those things, apart from the values and beliefs of religion and fine arts, which the society or nation expects each individual to cherish (or at least pay lip service to) -- for example, the inalienable rights of all human beings as perceived by a given society or nation, such as free enterprise, the freedom or muzzling of the press, freedom from fear, and the right to bear arms.

The fact is that these subject areas share common discourse and stylistic features when they are talked about in most languages. Evaluation and critical or suasive argument based on aesthetic criteria, in the case of the fine arts, is often linguistically indistinguishable from similar argument based on ethical or mystical criteria, in the case of religion and acculturation. Such arguments may be quite different in substance, but the linguistic devices employed tend to be the same. Here the affective and pragmatic aspects of language are clearly more important than the cognitive ones (while in social studies the balance is more nearly equal, or favors the cognitive). The intent in this third general subject area is not merely to inform the reader or hearer, but also to shape her behavior in some way. The emphasis on individual responsiveness, or responsibility, to society, nation, or culture often results in new linguistic patterns at the sentence level, and nearly always in new styles of discourse in a given language variety.

Our last category, the 'other subjects', is defined so as to include all general curriculum subjects not covered by the first three categories plus any other subject formally taught in the school (whether examinable or not) at a given educational level. School courses in physical education, domestic science, industrial arts, commercial and vocational education, and even 'driver education' would belong here, as would many other higher education and professional subjects which do not fit the first three categories. An example at the advanced levels might be engineering and business administration syllabuses which involve more than applied science and economics, or other types of professional training which contain elements of religion, fine arts, and acculturation in addition to the physical or social sciences. The linguistic aspects of these other curriculum areas and subject areas, at any rate, vary according to the subjects of instruction -- so much so that specialized *language* instruction is often associated with them (e.g. English or French for hoteliers, Latin, Greek, or Sanskrit for theological students). It is not useful, though, to generalize about the pronunciation, vocabulary, grammar, and discourse styles of these other subject areas, except to say that the linguistic features concerned may be even more specialized than those which occur in the general areas of science and mathematics, social studies, or fine arts, religion, and acculturation.

5.5. Language form and function

A third way of looking at language proficiency, less traditional than either the skills or surface-feature approaches (but not necessarily any better), is to make a fundamental distinction between language *form* and language *function*. This more modern approach has great appeal for the sociolinguist and the psycholinguist -- not only for the grammarian. The skills classification (5.1.) deals with language function in a very rough way, by separating the oral and written communication channels and by distinguishing among productive, receptive, and translingual skills. The classification of surface features (5.3.) into categories like pronunciation, vocabulary, and grammar is an attempt to deal with language form while taking function more or less for granted. But the precise relation between form and function is left dangling in both of these traditional practical approaches, in spite of the fact that it is well accounted for in various ways by descriptive and universal grammatical theories, and to some extent also by comparative and historical theories.

To put the form/function dichotomy in the simplest terms possible, language *form* is represented by actual spoken and written texts in a given language variety, lect, or type. Any adequate, systematic linguistic description will succeed in revealing the common surface features of such texts. Language *function* is represented by an account of all the possible notions and communicative intents which speakers and writers can express through the same language variety, lect, or type. A systematic taxonomy of these notions and intents must be constructed in such a way that they can be directly or indirectly related to the surface forms of speech and writing acts and events that express them. The relating of function and form in a given language or speech variety thus becomes the common task of the grammarian, the psycholinguist, and the sociolinguist, despite their very different purposes and orientations.

On the practical level, the dichotomy between form and function means that the semantics and pragmatics of a given language type must somehow be handled in the same way that the phonological, lexical, and syntactic features are handled. This in turn implies that the working analysis of semantic and pragmatic features must go far beyond the simple models provided by the skills type of classification. On the theoretical level, the same dichotomy makes possible a further dichotomy: between *performance* and *competence* (first noted in 5.3.). An assessment of individual language performance, in our terms, simply concentrates on the distance between standard language forms and the individual student's version of these forms as evidenced by his actual spoken and written products. An assessment of individual language competence, on the other hand, concentrates on the student's knowledge of the *rules* that relate semantic and pragmatic features to surface features of phonology, lexis, and syntax, not merely on his ability to produce acceptable linguistic forms.

A further distinction is sometimes made here between *linguistic competence* and *communicative competence*. The latter term includes not only the ability to select appropriate forms to suit the speaker/writer's notions and intents and to properly interpret the selection of forms by others (from the standard inventory of a single linguistic code), but also the ability to use the right code for the occasion. This second task depends on the social relation between the participants in the communication event, as well as on the message content, the context, and the background of the event.

Communicative competence is of great interest to sociolinguists and psycholinguists, precisely because it is a concept which goes beyond grammar into the realms of individual development and social interaction. It is a concept that we will be discussing further (especially in Chapter 8), but its particular relevance here is to the acquisition of language varieties , lects, and types outside the language classroom. To be communicatively competent means not only to speak and write effectively but also to be able to understand the implications of different styles and codes of speaking and writing within the same general language type. These different codes and styles include selection from verbal repertoires to express what is essentially the same notion or function in different ways (e.g. when to say 'children' and when to say 'kids' or 'offspring') and similar subtle adjustments in phonological, syntactic, and discourse features. To be communicatively competent means not only to follow the thread of discourse through the oral channels of a formal classroom discussion or the written channels of a set of instructional materials, but also to follow the thread of discourse through the verbal and non-verbal channels of a disorganized conversation among equals.

This last skill, in turn, involves the ability to interpret non-verbal signals common to the culture of the participants in the conversation -- non-verbal signals, in fact, of many different kinds, including kinesic signals (body movements and postures, facial expressions, etc.), proxemic signals (involving physical distances between participants), and other paralinguistic signals (e.g. 'tone of voice') which may or may not be handled in descriptions of the phonology of the language variety used at the time of interaction among the participants.

From this brief discussion it is apparent that if we are going to include the pragmatics of speech acts and speech events (and their graphic representations) in our model of language acquisition, we will have to include other cultural and sociolinguistic components as well, alongside the more purely linguistic or grammatical components. A possible model would be the following.

↑
Kinesics (etc.
Phonology
← Stylistics Lexis Morphology Syntax Discourse →
(etc.) Semantics (etc.)
Pragmatics (etc.)
↓

(The arrows in the display are intended to imply that the terms at the extremes of the model also connect very closely with what would appear to be their 'opposites' in terms of the particular orientation of the display; in other words, the extremes are also adjacent.)

The communicative contexts of the school which are associated with language and general curriculum, as we have seen, include many in which the student is only on the receiving end of communication or in which the subject matter is not something that the student himself would have chosen to communicate about -- in other words, contexts in which the student is a participant only in the sense that the message communicated somehow affects him linguisically, socially, and psychologically. But specific language proficiency and general communicative competence are also influenced in two ways yet to be considered: through the socialization of students in the school, and through their purely individual experience within the school confines, which may profoundly affect their cognitive and experiential (as well as linguistic) development outside the curriculum framework.

5.6. Socialization

One of the typical aims of schools is the socialization of students in the school. This aim may be explicitly stated by the educational authority, or it may be implicit in the program of instruction, in the nature of extra-curricular activities provided, or simply in the way the school itself is organized -- for example, with councils or advisory bodies having student membership, or with guidance specialists appointed to advise students. The usual rationale for formal or informal socialization is that if students can learn to get along with their peers, inferiors, and superiors in the microcosm of the school, this experience will help them to get along in the society at large once they leave the confines of the school for good.

Socialization, however, must be differentiated from acculturation, which is another of the typical aims of schools. Acculturation is normally attempted through what we have called the third general subject area (5.4.), in such subjects as literature, music, and art appreciation, moral and religious instruction, health and sex education, and occasionally in social studies such as civics and history as well. Socialization, on the other hand, is usually expected to take place somewhere outside the classroom, through informal contacts with teachers, administrators, and other students. Since the results of such socialization are not examinable, the process is never part of general curriculum, although acculturation may be. With the possible exception of organized physical education (as opposed to extracurricular sports and regular play periods), socialization is seldom programmed into actual instructional sequences either. This means that socialization becomes more or less independent of the formal *media of* *instruction* in the school concerned, with certain predictable consequences for language acquisition.

In a bilingual or multi-ethnic school, this separation of the socialization process from instructional sequences has very important consequences. In the process of acculturation, for example, moral and religious instruction can be subdivided in such a way that each ethnic, linguistic, or religious group gets only the inculcation of its own kind of values, quite often in a language medium shared by the whole group. In socialization, on the other hand, two distinct patterns can be followed outside the classroom: a) Each ethnic, religious, or linguistic group segregates itself from the others, and uses a common language type or lingua franca to interact -- not necessarily one of the school language varieties; or b) there is cross-socialization of the groups, for the purposes of interaction on the playground, in the corridors, and in the cafeteria, with verbal communication again taking place in a common language, but this time more likely one of the school language varieties. In the first case, the acquisition of the intra-group language is not usually accelerated appreciably, because it is often a home or community language that is so used; in the second case, acquisition of the inter-group language may be profoundly affected, and if it is one of the school language varieties it will tend to support learning in either general or language curriculum, or both.

According to the formulation given at the end of Section 5.2., oral communication dominates in pupil-peer interaction. This kind of communicative context, involving as it does only the students themselves, is in fact the only context in which students have a real opportunity to develop speaking proficiency and oral communicative competence in any language variety. Opportunities for speaking to teachers are (except in schools with low teacher-pupil ratios) severely limited by classroom constraints, and in other contexts the written channels predominate. If this formulation is correct, in the typical school the development of personal communicative competence is closely tied up with socialization, because the latter process also occurs largely in the pupil-peer interaction context. Whether or not the language selected for inter-group communication corresponds with one of the school varieties is not something the school can easily control.

Nevertheless the development of *some* kind of language proficiency and communicative competence, even in the 'wrong' language, is always promoted through socialization.

One kind of proficiency that is affected, and a strictly language-specific one, is pronunciation. While language learners are typically able to adjust quickly to many variant pronunciation styles or 'accents' within the same language type on a *passive* basis, their *active* control of a particular pronunciation style quickly becomes crystallized or fossilized through habit formation. Even when the language concerned has been previously learned in the home or in the school, both overall pronunciation style and the pronunciations of specific words can still be changed by the younger pupil as the result of peer-group pressures. (Indeed, this is one way in which languges themselves change.) If the common language of inter-group communication is relatively new to some students, and must be acquired on the playground, in the corridors, and in the cafeteria of the school as well as learned through language instruction, the older student will almost certainly adopt the pronunciation style of the most respected members of the peer group, in preference to that favored by his teachers and administrators. When the peer-group language happens to be of the same type as the main oral medium of the school, some students will be able to switch from one pronunciation style in the classroom to another on the playground, but most students will gradually allow the more frequent style (that of the peer group) to become dominant and habitual.

The other language-specific surface features, vocabulary and grammar, are also noticeably affected by patterns of socialization, but not quite in the same way as pronunciation. When a student really wants to, he can change his vocabulary selection and grammatical style -- much more easily than he can change a pronunciation style after it has crystallized. Besides the factor of fossilization, another factor here is that the acquisition of both vocabulary and grammar is reinforced through the written channels, while pronunciation is hardly affected. Deviant grammatical forms and vocabulary can also become habitual in speech, but when the student sits down to write, he has time to think about the selection of written forms. In the long run, this may result in some standardization of his speech forms as well, but only with regard to vocabulary and grammar, not pronunciation.

So far we have been principally concerned with bilingual or multi-ethnic schools in which socialization takes place either on an intra-group or an inter-group.basis, and in which communication involves at least one language which is unfamiliar to at least some students. But communicative competence is affected by socialization even in the most monolingual, ethnically homogeneous school. The kinds of interaction which take place between pupil and teacher and between pupil and textbook tend to be on the rational, cognitive, and notional side rather than on the affective and pragmatic side. The pupil-peer communicative context, on the other hand, offers most of the real opportunities for the development of communicative competence in any language, including the pupil's home language, during school hours. Fellow students must be commanded and obeyed, cajoled and threatened, humiliated and praised, deceived and flattered, cooperated with and excluded, as well as being informed and questioned. These speech acts, moreover, must be performed in a socially acceptable style in order to succeed. Normally, no teacher will be present to judge whether the communication is correct or incorrect, there are no examinations to be passed, and the only 'marks' the student gets are in terms of peer acceptance and cooperation.

Communicative competence acquired through socialization outside the classroom may be language-specific -- that is to say, it may be acquired only in connection with the language variety (or varieties) which are commonly used for intra-group and inter-group communication. If the language types affected are also used as media of instruction or components of language curriculum in the same school, the competence acquired will sooner or later come to be applied to other learning and communication tasks, especially in higher education and in occupations undertaken after leaving school. If the language type is not used at any stage of education, the acquired communicative competence will not necessarily be wasted.

A student who has a good grasp of the pragmatics of one language will at least be aware of what to look for in learning the corresponding speech acts of another language.

The student who is at a disadvantage here is the shy, studious type who 'does well' in languages, in the sense that he learns the rational, cognitive, and notional aspects of several languages, but because he is too busy or inept at socializing does not learn the pragmatic aspects of any language well. Typical speech acts, in fact, may never occur at all in formal instructional programs conducted through a school language medium. Even if communicative competence can be transferred successfully from one language type to another, therefore, some students will have nothing much to transfer unless they have participated actively in socialization outside the classroom.

5.7. Individual experience

We now move from socialization, or group experience within the school which affects students within groups almost equally, to the kinds of separate, individual experience of students in schools which may affect the rate and emphasis of language acquisition outside the language class. At the same time that students are being subjected to the homogenizing influences of socialization and group activities, they are also becoming differentiated from each other, in the psychological sense, directly through the process of schooling and through exposure to various stimuli available in the school.

As far as individual development is concerned, the non-verbal as well as the verbal channels of instruction play an important part. In particular, the self-instructional channels and media which the school provides in its library, laboratories, and classrooms allow each student to develop psychologically in his own way and at his own pace, independently of his exposure to group learning and to channels shared by all students at the same time. Even in schools with very few facilities for self-instruction, individual experience gained through personally chosen materials available in the school manifests itself in two important ways: (a) in terms of cognitive development; (b) in terms of knowledge of life outside the confines of the particular school, home, and community. The first kind of experience has its greatest effect on the acquisition of grammatical and discourse features of language, and the second on vocabulary expansion and enrichment, in particular language types, plus a broadening of individual semantic capacity which becomes useful in the acquisition of any language where literature relevant to the new field of experience exists.

The cognitive development of individual students is a psychological concept, not really a psycholinguistic one, although it can be closely linked with both language acquisition and language learning. For example, the Piagetian cognitive skill which children are said to acquire at various typical ages include conservation (of number, length, volume, weight, horizontality, etc.), classification, concrete operations, formal operations, and representation. Obviously, children can acquire or learn such skills without being aware of the language labels attached to them -- either the technical terms or the ordinary words. A child who knows how to conserve volume will not attempt to pour an amount of liquid into a vessel too small to hold the liquid (unless he wants to see it spill over), but the same child will not necessarily be able to verbalize about how he knew that the vessel was too small.

Although the cognitive skills themselves are supposed to be measurable independently of language, the rate at which children acquire these skills is apparently affected somewhat by linguistic, cultural, and sociological factors as well as by psychological ones. It has been observed, for example, that while Japanese children acquire arithmetical skills faster than American and European children of the same cohort, this advantage seems to disappear when the children come to study algebra. Some Japanese scholars have related this phenomenon directly to linguistic differences between Japanese and several European languages. If this type of correlation obtains, then its converse probably also does -- that is, the learning of specific arithmetical and algebraic skills can also affect the rate at which the corresponding linguistic patterns are acquired in unfamiliar media of instruction.

One would expect, moreover, that the linguistic features most closely associated with cognitive development, namely grammatical and discourse features, would be more affected than vocabulary and pronunciation. It is also reasonable to assume that most of the cognitive development which has a potential effect on language acquisition occurs in connection with curriculum areas like science and mathematics, somewhat less in the social studies (with the possible exception of geography and economics), and least of all in religion, fine arts, acculturation, and the other subject areas.

Quite apart from cognitive development, marked individual differences show up likewise in the amount of knowledge and experience gained through the school concerning life outside the school, home, and community. This new knowledge is filtered and the new experience is necessarily vicarious. Whether verbally acquired or not, the knowledge is screened through other human beings' perceptions, not directly experienced in the way that knowledge of the immediate environment is acquired. Much of this vicarious experience is gained from books and pictures, of course. To the extent that these books and pictures are not curriculum materials that are shared by all students at more or less the same time, the knowledge thus acquired can be highly individual, reflecting the special interests of the student rather than those of the school.

Individual students acquire this extra sort of experience through their own curiosity, and the speed at which they do so depends in large measure on their language proficiency in the relevant non-instructional media. More particularly, it depends on their reading comprehension in the various written media in which books are available in the school and in which pictures are captioned. As in the case of cognitive development, the converse relation must also hold: the greater the extra experience and knowledge of the world outside the school, the more the student's imagination will stretch the boundaries of his semantic field and allow him to acquire new language concepts, and especially new vocabulary items.

This last point may seem somewhat obscure, and it is certainly not conventional wisdom. The example of the English word 'palace' may help to clarify the point. When can a student (first or second language learner) be said to 'know' what *palace* means? This is not as simple a question as some kinds of vocabulary tests would make it seem. Obviously, the child who has seen enough pictures, drawings, or models of palaces can distinguish their general architectural features from those of, say, factories or apartment buildings; this child knows more about the meaning of the word than the child who has never seen such physical representations of palaces. The child who has seen several examples of real palaces from the outside may have a better grasp of the architectural concept than the one who has only seen pictures or models of them. And the child who has had the chance to enter real palaces as a visitor may know still more about the meaning of the word, but he can't know as much as the child who has grown up in a palace, and so on.

Yet all of these meanings of a word like *palace* can be acquired from the context of books or oral literature, without the reader or listener ever having set foot inside a palace or ever having seen a physical representation of one. And most of the meanings can be acquired from either narrative or descriptive accounts involving palaces. Individual experience of palaces, whether direct or vicarious, thus can provide not only the basis for understanding the English concept *palace* but also similar concepts in many other languages. On the other hand, when this special experience is lacking, telling a student that *palazzo* is 'the Italian word for palace' will probably do more harm than good, even if the cross-language equivalent happens to be a reasonably accurate one.

Both cognitive development and individual experience, then, can be said to have a reciprocal relationship with language learning and language acquisition. One cannot learn languages without some cognitive development and some experience of the world, either direct or vicarious, to relate the semantic and pragmatic aspects of the language to. Since at least one language is acquired by every normal child, there is reason for assuming that cognitive development and meaningful storing-up of individual experiences are impossible without simultaneous language development of some kind. Although both cognitive development and individual experience of the outside world are promoted by subject areas in the general curriculum, and to some extent also by socialization and language instruction, the unique knowledge that the student acquires and the particular skills he develops most rapidly are largely dependent on non-curricular resources in the school, on stimuli which appeal to his particular interests, and on other such sources which are able to satisfy his natural curiosity. This special knowledge and these cognitive skills set him apart from other students and affect the rate of his acquisition of one or more specific languages.

5.8. **Language proficiency**

A summary of this chapter will now lead naturally to a useful definition of the term *language proficiency*, so far undefined, and will set the stage for further comments on language instruction and language curriculum to be presented in the next five chapters.

Besides being *learned* through conscious effort on the part of the student, either through self-instruction or other kinds of formal instruction provided by the school in its language and general curricula, languages can be acquired both inside and outside the school. Within the school, languages are acquired in four main communicative contexts: (1) pupil-teacher interaction; (2) pupil-peer interaction; (3) the interaction of the pupil with instructional materials; and (4) with other stimuli provided by the school. Communication in the first and third contexts tends to focus on the content of general curriculum: (a) mathematics and science; (b) social studies; (c) fine arts, religion, and acculturation; (d) other subject areas (but of course it is not entirely confined to these subjects). Cognitive development of the individual student is greatly influenced by the learning of general curriculum subjects, especially science and mathematics.

Communication in the second and fourth contexts tends to focus on non-academic subjects and on themes of personal interest to individual students and groups of students of the same age. The fourth communicative context, which allows the student to pursue his own interests independently of group interaction but within the school framework, contributes to the development of secondary personal knowledge of the world outside the school and the immediate community, and knowledge of more distant physical environments and the universe itself. Depending on the student's special interests, this additional knowledge and vicarious experience may accelerate his cognitive development with regard to certain skills as well. Socialization of students in schools occurs mainly outside the classroom, and usually outside the general curriculum areas; the second communicative context is critical here, and it contributes to the development of oral communicative competence, not necessarily in a language used as a medium of instruction in the school.

From the linguistic point of view, language acquisition can be broken down in a number of different ways, but such analyses are no different from the ways in which language learning can be broken down, and the techniques for measuring language proficiency are the same in either case. In general, there are three kinds of analysis of language proficiency to be considered. The first is a skills-based analysis, as follows.

	Oral Channels	Written Channels
Productive skills :	Speaking (S)	Writing (W)
Receptive skills :	Understanding (U)	Reading (R)
Translingual skills :	Interpreting (I)	Translating (T)

The second is a discrete-point analysis, based on surface linguistic features rather than on language skills.

Popular Term *	Productive	Receptive	Nearest Equivalent in Linguistics
Pronunciation (± Spelling)	Enciphering of pronunciation, spelling, and punctuation	Deciphering of pronunciation, spelling, and punctuation	Phonology and Graphemics
Vocabulary	Recalling and producing words	Recognizing words in context	Lexis (± Morphology)
Grammar	Encoding of sentences	Decoding of sentences	Syntax (± Morphology)
(Rhetoric)	Constructing texts	Interpreting texts	Discourse

This second type of analysis still leaves out a major component of theoretical linguistic description, namely semantics, and a corresponding major component of what is usually called communicative competence, namely pragmatics. These components are not directly observable or testable in the same sense that the other components are, and they must be inferred, but they are nevertheless vital to definitions of language proficiency and communicative competence.

A third type of analysis is possible whereby these components can be included -- such an analysis might be called *integrative* (as opposed to discrete-point) analysis along formal/functional lines. As we have seen in Section 8.5., however, the inclusion of pragmatics in the model automatically requires the inclusion of components such as kinesics, proxemics, paralinguistic features, verbal repertoire, code selection, and stylistic features of language varieties more normally associated with sociolinguistic or culturally-oriented accounts of speech acts and speech events than with purely linguistic or grammatical accounts.

The model proposed here, for this third type of analysis, makes a formal/functional distinction between performance and competence, on the one hand, and a distinction between linguistic and communicative competence and/or performance, on the other. We might schematize this relationship as follows.

	Components	Competence	Performance
Grammatical/ linguistic level	1. Phonology 2. Lexis 3. Syntax 4. Semantics	'linguistic competence' = knowledge of rules governing components #1 through #4	Actual oral and written texts (produced, reacted to, or participated in)
Cultural/ communicative level	5. Kinesics, etc. 6. Stylistics 7. Discourse 8. Pragmatics	'communicative competence' = knowledge of rules governing #1 through #8	Speech acts and events, and their graphic representations (produced, reacted to, etc.)

Using this kind of model, we are now ready to define the term 'language proficiency'. In order to be useful, the definition must fit the other topics of this book, and especially the concepts of language curriculum, language instruction, and the channels and media of general curriculum.

Language proficiency, for our purposes, is the ability (competence) to produce, react to, and participate in the production of, oral and written texts of all kinds in a single, pre-defined language variety (for example, one designated as a medium of instruction or school language subject), *as measured by* comparison of actual performance with equivalent performance of educated native speakers of the same language variety with respect to the same texts.

This definition makes language proficiency independent of the manner of language acquisition, learning, or instrucution. It also makes possible a distinction between tests of general language proficiency and tests of achievement in specific school programs of instruction and language curricula (see Chapter 9).

The question as to whether language proficiency, so defined, includes communicative competence as well as linguistic or grammatical competence is a very complex one, and it is explored further in many of the remaining chapters. (The answer depends in part, for example, on whether 'educated native speakers' can all be assumed to be acculturated, socialized, and literate to the same degree.) For the moment, however, the definition makes possible a new formula of distance, distinct from what we have called channel distance (in Section 3.7. and 4.3.).

Proficiency distance is a generalized measure of the difference between the proficiency (P) of an educated native speaker (n) of Language Variety X and the proficiency of a learner, acquirer, or pupil (p) of the same language variety. This distance is assumed to be at any given time a constant, regardless of the channel or content of the text which is to be produced, reacted to, or participated in by the learner, so long as the language variety (X) itself does not change. This new measure of distance is formulated as follows:

$$XPn \quad - \quad XPp \quad = \quad \text{proficiency distance for pupil } p$$

The value of the distance, as in the case of channel distance, can range from near zero to infinity, and can be arbitrarily segmented in many different ways. Since XPn - XPn = O, the distance does not exist for 'educated native speakers' whereas channel distance may

CHAPTER 6

STUDY SKILLS AND LANGUAGE

6.1. Graphic and visual displays
6.2. Relaying verbal information
6.3. Process, instruction, and narration
6.4. Use of reference materials
6.5. Interviews and questionnaires
6.6. Outlines, summaries, syntheses
6.7. Argument and persuasion
6.8. Translating, interpreting, and paraphrasing

Many of the requirements of general curriculum in the typical school overlap with the requirements of language curriculum. This is a statement which can be made quite independently of the natural relation which holds between various parts of the language curriculum and the media of instruction, and also independently of language proficiency as defined at the end of Chapter 5. The area of overlap occurs in what are often called the 'study skills' -- these being the skills which the student must have to succeed in learning both the general curriculum and the language curriculum, especially at the higher levels of education. The study skills include both linguistic and non-linguistic elements, and no useful purpose can be served by making an *a priori* judgment as to which elements belong more properly to the language side and which belong to the general curriculum side. In practice, the skills are learned or acquired in both language and general instruction, and trying to keep them in separate compartments will only lead to confusion.

Many taxonomies of study skills and the education objectives related to them have been attempted, and some very elaborate ones have been developed by various writers (e.g. Bloom). Rather than adopt or adapt an existing taxonomy for our purposes, we will discuss only those skills which have obvious links to the subject matter of language curriculum and instruction. The definition of the term 'study skills' as used here is then a denotative one: It refers to the various skills described in the eight sections of this chapter. For the sake of convenience, the skills are always considered to be related to communication tasks, and the skills so related are grouped together in the frame of reference provided by the communicative context 'pupil: instructional materials' of the last Chapter (5.2., 5.3.).

Just as the language skills may be acquired through the general curriculum, the study skills may be acquired through language instruction or learned as part of the language curriculum itself. Obviously, they can also be acquired or learned through the general curriculum, and through the pursuit of purely personal interests made possible by the school facilities.

6.1. Graphic and visual displays

At some point in his educational career, the student must learn to interpret graphic and visual display as well as to read or listen to verbal texts in one or more language media. Very often, in fact, the verbal and non-verbal channels are used in close association with each other, and as we have seen (1.4.), the visual channels account for a high percentage of non-verbal channel use in the typical school. Frequently, the student must not only interpret but also produce graphic representations, pictures, diagrams, tables, three-dimensional models, and other visual displays. This he often does in conection with verbal presentation, through the oral and written channels. In fact, our original definition of a text (first stated in 1.5.) anticipated just this sort of combination: A text is the sum of the recorded features of channel use in a particular place over a designated period of time. Thus students may be called upon, in schools, to produce, to interpret, and to participate in texts containing non-verbal visual channel uses.

The distinction 'graphic' versus 'visual' here has to do with whether written words, characters, or other linguistic symbols occur in direct association with an artifact which is primarily designed to be visually (and non-verbally) appreciated. For example, a map or a globe with place-names on it, a graph with labelled axes, or even a table consisting entirely of figures would be considered a graphic display; an unlabelled map, diagram, or picture would be a visual display. Although the main skills involved in producing and interpreting such displays are certainly non-verbal ones, there is good evidence that many students go through a stage of verbalization, both in interpreting and producing these artifacts. Such verbalization is normally in the form of spoken language, but in a form which does not necessarily result in audible speech production (but rather in subliminal phonation). Just as some people 'move their lips' when reading silently or writing, others vocalize subliminally while scanning or constructing a purely visual display, especially when some effort of memory for detail is involved. The oral language which is typically used for this purpose is the native language.

Quite apart from the phenomenon of subliminal phonation, there are certain situations where one person must describe a visual presentation to another person in words, either orally or in writing, and there are other situations where a visual presentation must be constructed from another person's verbal description. For example, both situations occur when a stage manager instructs his crew how to set the stage for a given scene in a play, working from a diagram provided by the author or director of the play. The manager must interpret the visual presentation of the stage setting in specific oral-language terms in order to direct the stagehands, and if the latter carry out the oral instructions correctly they will succeed in producing a (three dimensional) replica of the original stage diagram.

Likewise, when an automobile driver marks the route on his map while listening to verbal directions on how to get somewhere, or when a police artist draws a suspected criminal's face from verbal descriptions given by the criminal's victims, both are producing examples of constructing visual displays from verbal stimuli. The opposite situation is illustrated by a teacher explaining the meaning of a graph to his beginning mathematics students, or a person describing a picture over the telephone. Thus the skills of transforming visually perceived or graphic information into verbal descriptions and vice versa are genuine communication skills, not confined to an occasional intermediate role in the transfer of information within a single individual's conscious mind.

As pointed out earlier (in Chapter 1), the visual channels account for a very high percentage of the non-verbal channels actually used in schools, and they occur in both general and language curriculum. If accurate verbal descriptions of visually perceived information were not possible, the education of the blind would not be as successful as it is. Many sighted students, on the other hand, who have not been explicitly taught how to 'read' a map will never learn how to interpret maps even though they can read the place-names and other linguistic symbols printed on maps without difficulty. Thus the verbalization of graphically or visually presented information, and its converse, are important skills which involve the use of one or more school languages. In all forms of bilingual education (4.2.), these skills may have to be learned separately for each language concerned, although there is some obvious transfer of the non-verbal components of the skills. Even in monolingual education, it is not safe to assume that the skills will be acquired naturally, without any teaching emphasis. As in the case of using reference materials (see 6.4.), the necessary instruction can take place at a very early age, and it can take place in connection with either language instruction or general curriculum instruction.

6.2. Relaying verbal information

The skills of relaying verbal information are closely allied with the interpretation and production of visual displays (6.1.), in the sense that they have the same essential communication functions and the same possibilities for intra-personal transfer. In this section we will concentrate primarily on the communicative functions of relaying verbal information. The intra-personal functions, however, are equally important to students in schools. When a student mentally records oral-channel or written-channel features of any school text (see 1.5.), he is in effect relaying verbal information gathered from a classroom presentation or a set of instructional materials to his own memory storage. When the same student overtly records verbal text features, using the corresponding channels or different channels for the recording process, he is relaying verbal information not only for his own use but potentially for the use of others as well.

The general area of relaying verbal information, in terms of language skills, is defined by all possible combinations of the four basic monolingual skills (4.3.): speaking (S), understanding (U), writing (W), and reading (R), with message content and medium being held relatively contant. The tabulation below gives an example for each formula involved, with arrows representing the direction of transfer.

U → S	Repeating an oral message aloud
U → W	Taking dictation
R → S	Reading aloud
R → W	Copying a written message

In their simplest form, all of the potentially communicative acts symbolized in the four formulas are not confined to the language classroom (although the first two are quite common there), but have a place in the real world. Writers relay customers' orders to cooks, secretaries take dictation, prime ministers read out speeches written by their assistants, and typists reproduce handwritten manuscripts as accurately as they can. As soon as we are tempted to regard these functions as simple mechanical acts, not worthy of consideration as real communication skills, we can be reminded almost daily of the falseness of this position when something goes wrong. The waiter brings three coffees and one tea instead of three teas and one coffee, the secretary writes 'counsel' for our intended 'consul', the prime minister gets the phrasing wrong and insults a friendly country, and the typist leaves out a whole line of our manuscript without noticing that he has done so.

Far from being simple mechanical chores, the acts of relaying verbal information in any form or channel to any other form or channel, even without any significant change in the content or medium of the message, demand real language proficiency. For example, in the case of typing a manuscript (and especially a handwritten one), one must allow on inordinate length of time checking and re-checking if the typist does not know the language medium concerned. Typists who are proficient in the language make far fewer *serious* errors, simply because they are able to monitor the linguistic flow of what they are copying. In the case of reading a script aloud, the speaker/reader must not only contend with the channel distance W - R (see 4.3); he must also somehow convert R to S in such a way that his audience's channel distance S-U is a small one. Even if the public speaker's literacy in the language medium of the prepared text is adequate, his pronunciation, phrasing, and intonation may be so faulty that his message does not get across to the audience, and so on.

The most common contexts for the relaying of verbal information, however, both in the school and in the outside world, go beyond these 'simple' acts. Usually there is some degree of editing, rephrasing, synthesizing, summarizing, reordering, highlighting, or even expanding the message, which changes the original content of the message without necessarily damaging its intent. The waiter doesn't really repeat all the irrelevant things the customers have said when he relays their order to the cook, and the secretary doesn't really write everything down, even in shorthand, but relies on her ability to reconstruct the text later. The prime minister departs from his prepared script to tell a joke, and the good typist has to be able to tell the difference between a marginal note and the actual text to be copied.

The most typical cases of relaying verbal information outside the school, in fact, revolve around the private communcitaion channels (as opposed to the mass communication channels): the telephone, the telegraph, the postal service, and delivery services. Much of business, official, and private correspondence consists simply of relayed verbal information. The form letter, with only minimal changes made in the text by the message originator, is a case in point. As far as the oral channels are concerned, perhaps the most common case of all is the taking of telephone messages for absent persons, a variation of U → W (taking dictation) which almost always involves some editing and abbreviation of the original message. The skills of summarizing, synthesizing, and outlining, however, are considered as separate study skills and are treated elsewhere in this chapter (6.6.).

While the basic techniques of relaying verbal information are obviously dependent on mastery of the four monolingual skills, the ability to separate the 'noise' and other irrelevant text features from the salient content of the message, without actually summarizing it, is a skill which must be considered at least partly independent of language proficiency. It is also a skill which a student uses all the time when he takes notes on a lecture or on an assigned reading in general curriculum, and when he reports back to his teachers, orally or in writing, on the content of his notes. Although it includes elements of summarizing, note-taking itself is often called a separate study skill. But the essential ability to separate 'noise' from salient features of a text can be applied to the interpretation and reporting of non-verbal channel stimuli as well -- for example, extremely detailed pictures or photographs. Thus note-taking is better viewed as a combination of the skill of relaying verbal information and the skills related to summarizing (see 6.6.); if graphic or visual stimuli are used in conjunction with the written text or lecture on which notes are being taken, of course, the skill of interpreting and producing visual displays (6.1.) is also involved.

Like the latter skill, the relaying of verbal information in its less complex aspect can be acquired or learned in connection with either language or general instruction, and there is no rule of thumb which can be applied to determine in which kind of curriculum it should be taught (in the typical case where the medium of instruction recurs as a language subject). Once the skill has been learned or acquired, however, it should be readily transferable to other languages, given only sufficient proficiency in these languages on the part of the student. This is not necessarily true of the more complex skills such as outlining and summarizing, where cultural and academic conventions may vary greatly from language medium to language medium.

6.3. Process, insrtruction, and narration

This general category of study skills combines a dynamic version of the interpretation and production of (static) visual displays (6.1.) with some elements of relaying verbal information (6.2.). The specific skills include the ability to describe a process, and the converse ability to comprehend a narrative sequence or replicate a process by carrying out a set of instructions. In the first case, the process itself may be perceived as it unfolds in reality, it may be perceived as it is filtered through some visual medium or channel (e.g. a film or videotape), or it may be purely imagined, as in the case of creative story-telling. In the second case, the already established version of the process may be reacted to behaviorally (e.g. by following directions or acting out a role), it may be merely stored for future reference (comprehended and remembered), or in the rare case it may be replicated through visual channels (e.g. by drawing a series of diagrams or cartoons).

Examples of reacting to instructions, process descriptions, and narrations are very easily found, both inside and outside the school. Following instructions behaviorally is illustrated by making a cake from a recipe (at home or in a domestic science class), conducting a chemistry experiment described in a textbook, or repairing a radio from instructions given in a manual. The instructions may simply be stored for future reference, as when a motorist memorizes a set of directions given by a friend, and only later puts them into practice in getting to his destination. On the other hand, the ability to follow the plot of a story or play, or the unfolding of an actual event, may evoke no immediate or delayed behavioral response except laughter, tears, applause, yawns, gasps, frowns, and other non-linguistic responses, but the act of following the plot nevertheless requires skills which go beyond the linguistic skills involved in reading the story or understanding what is said by the characters in the play.

Even if discourse and pragmatic elements are included in our model of language proficiency (see 5.8.), these will not be sufficient to cover the visually perceived (or imagined) aspects of comprehending a particular narrative flow. In fact, if there were not already a built-in psychological mechanism for recognizing process, instruction, and narration structures, the linguistic correlates of these structures could not be acquired or learned, but every natural language variety includes such correlates. Thus the examples of reacting to instructions, process descriptions, and narrations of the preceding paragraph have non-verbal as well as verbal aspects.

The converse examples, which involve producing rather than reacting to process descriptions, are also to be found both in everyday life and in education. Any work supervisor, like any teacher, must be able to give verbal instructions for sequential actions in such a way that they can be carried out without confusion by employees or students who possess the reciprocal skill. The radio sports announcer must be able to describe what is happening on the playing field as it happens, relying only on the direct visual input of the process itself. The science teacher or lab technician often has to describe the sequence of a particular experiment, either orally or in writing, and he must be able to do this step by step, sometimes acting out or demonstrating some of the steps.

This reciprocal skill also has its counterpart in fiction and drama. Whereas the stage manager merely has to replicate a static arrangement of the set (6.1.), the author or director must move actors or fictional characters around the real or imagined set according to a linear time-sequence worked out in advance, and he needs the same skills of verbalizing about the process so that the actors or readers can follow the sequence. The cartoonist who puts his narrative sequence into a series of static visual displays and the film animator, likewise, share skills in common with the commercial artist who draws a series of diagrams to be used in the instruction sheet for assembling a toy, and so on. Thus the skills involved in producing process descriptions, although they are frequently associated with linguistic skills, can also be disassociated from verbal manifestations of them.

As in the simpler case of relaying information (6.2.), the description of a process can be derived from a verbal input as well as from a visual stimulus or an imagined sequence. The most common case is reported speech. A repeats a dialogue overheard between B and C, inserting such cues as 'B said', 'Then C said', etc. When the input is verbal, editing is common -- 'B didn't seem to understand the problem', for example, in place of what B actually said. Whether the input is verbal or visual, however, some degree of summarizing, synthesizing, or even altering the sequence of events may take place during narration or the giving of instructions. The skills involved here are still considered to be independent of the specific skills relating to process, instruction, and narration. The converse cases, incomplete or inaccurate following of instruction or narrative flow, can be considered as evidence of faulty encoding or decoding of the process verbalization.

Questions as to when and where the skills relating to process, instruction, and narration should be introduced into the curriculum can be dealt with only when similar questions about graphic and visual displays and about the relaying of verbal information have been answered. It seems fairly clear that the linguistic skills involved in process are, at least in most natural languages, more complex than the linguistic skills involved in static description and the relaying of information. For this reason alone, perhaps, the skills relating to process should begin to be taught somewhat later than those of the other two categories, and it seems logical to assume that the balance of emphasis between language and general curriculum instruction should be similar for all of these categories of skills. That is to say, whatever has been taught relating to graphic and visual displays and to the relaying of verbal information can later easily be built upon, in either type of curriculum, when it comes to teaching the skills of interpreting and producing process descriptions. The reverse order is, for most media types, less satisfactory.

6.4. The use of reference materials

By this general heading is meant the study skills (or habits) of consulting available written (and sometimes also oral) materials on a given subject in order to acquire a better understanding of the subject as a whole or to locate particular missing details within the subject area. These skills can be taught to groups of students, but they have not been learned until the individual student knows how to exercise them without help from teachers and librarians. The use of reference materials presupposes some command of the first three categories of skills discussed in this chapter (6.1.-6.3.), because reference materials typically contain graphic and visual displays, descriptions, narrations, and instructions, and they automatically require the ability to relay information from one mode to another -- or, at the very least, the ability to copy a text.

Since reference materials are normally in some kind of written form, with relatively few such school materials being taped or recorded in oral form, the skills involved in using them also presuppose an ability to read at least one language medium type rapidly and efficiently. This reading requirement, in turn, brings into play a number of related skills which are partly linguistic and partly study skills:

1) *Skimming,* or the ability to pass the eyes rapidly over a whole written text for the purpose of getting a general idea of its content (any text can be skimmed, but not all texts can be successfully speed-read -- see below);
2) *Scanning,* or the rapid perusal of the text to locate specific details thought to be embedded in it

somewhere (these first two terms are exactly reversed in some taxonomies of 'reading skills');

3) *Speed-reading*, or the ability to force oneself to read a text more rapidly than is normal, at the expense of only a moderate decline in comprehension of the text (the borderline between speed-reading and skimming is often a fuzzy one -- the main difference is the intent of the reader);
4) *Data retrieval skills*, in general, an understanding of library card systems, and other systems of classification, cross-referencing, and access to reference materials of various kinds, and a knowledge of how to use bibiliographies, encyclopedias, and other reference materials of the library itself.

This last, generalized skill has special relevance to the higher levels of education, where original research is often required. At the lower levels it may mean simply a knowledge of how to use atlases, dictionaries, and encyclopedias. The first three skills have their counterparts in the use of oral-channel reference materials, in terms of the selectivity and attention set of the listening task, but actual adjustments to the speed of oral-channel reception requires special playback equipment not normally found in school libraries, laboratories, or resource rooms.

At the lower levels of schooling, the use of reference materials can begin as soon as the student has learned to read (or listen to tapes of) some language independently. Picture dictionaries, maps and globes, charts, diagrams, and other displays placed in the elementary school classroom already constitute a category of reference materials, which can be exploited even in the earliest years as such by the resourceful teacher. The use of larger dictionaries, encyclopedias, and atlases becomes the next logical step in learning or acquiring the essential skills, followed by trips to the school library in search of information (as opposed to selecting reading materials merely for pleasure). From that point on, the use of journals, bibliographies and periodical indexes, microfilm and microfiche materials, recorded tapes, and the full range of library services becomes a natural consequence of the early use of simpler reference materials that can be kept in the classroom.

Some kind of requirement for the use of reference materials exists in most schools, at every level, and this requirement is most often associated with general curriculum rather than with language curriculum. The teaching of the actual skills, however, and the development of the reading habit itself can often be included in the program of language instruction. This is typically the case in sequential bilingual education (4.2.), where the earlier language medium of instruction is not especially well endowed with reference materials but the later medium is, and in all forms of translingual education. In such situations, it makes sense to wait until the second language is well established before attempting to teach or require the use of reference materials and the associated skills. The mere fact that more literature is available to read in the later or less-familiar medium of instruction often becomes the motivating force for learning the language as quickly as possible, and the sooner the student is made aware of the available resources the more likely he is to want to learn to use them. On the other hand, the student can become frustrated if he is forced to use the reference materials before he has acquired the linguistic capability to take advantage of them.

In the monolingual school, the introduction of the use of reference materials as part of language instruction is possible even if the language curriculum proper does not call for it. For example, if the language in question has a difficult orthography (e.g. English), a picture dictionary classified by topic can help students learn how to spell irregularly-spelled words. If the language has good correspondence between pronunciation and spelling, the pupils can go directly to a conventional dictionary to look up words. Atlases, weather charts, and timetables have long been used in language instruction as devices to generate oral exercises and guided compositions, and similar use can be made of other basic types of reference materials in the language classroom. The fact that the skill (or habit) involved is more relevant to general curriculum than to language curriculum does not preclude the possibility of establishing it through both types of instruction.

The final point to be made about the use of reference materials is that the skills are probably the most transferable, from language medium to language medium, of all the 'study skills'. If a student learns how to skim, scan, and speed-read in one language, the chances are very good that he will be able to do these things in a second language once his basic proficiency and literacy in the second language have become established -- and do them without additional instruction or urging. Therefore, even when the occasions for early and meaningful applications of these skills are scanty, from the point of view of general curriculum (as when suitable reference materials in the right language medium are lacking), there may still be some justification for including them in language instruction.

Since libraries all over the world tend to be organized on the same general principles, regardless of the language medium of their contents, the fourth category of related skills, 'data retrieval skills', is also transferable. No matter how scanty the reference materials are in the medium of instruction of a monolingual school or school system, there is a case to be made for requiring their use as soon as possible in the educational sequence. The advantage of this is that when students finally are exposed to a new medium of instruction or a new reference language, they will not have to learn how to use reference materials at the same time they are trying to learn the new language itself. And even if they are never exposed to a second language, they will at least leave school with a knowledge of how to use reference materials in the first language. This knowledge, along with the related abilities of skimming, scanning and speed-reading, may be applied later in life as reference materials in the first language become more plentiful.

6.5. Interviews and questionnaires

Besides being able to glean information from reference materials, the advanced student must also be able to produce his own instruments for collecting data that he needs and that is otherwise unavailable. The simplest version of this category of study skills consists of making lists of questions, to be asked orally or in writing, which are intended to elicit the missing information from persons who are likely to be able to provide it. The passive aspect of these skills, the ability to answer questions in interviews and on questionnaires, is something which the typical school will find necessary to teach anyway, and usually at a much lower level than the skills of designing the corresponding instruments. This is because most school-leavers will have to undergo interviews and fill out questionnaires in virtually every walk of life, from employment through applying for licenses or credit to paying their business taxes.

It is only natural for schools to build on these passive skills, which are necessary for all students, in teaching the advanced student to plan his own interviews and questionnaires. But relatively few educational systems take full advantage of this natural relationship between the interviewee and the interviewer in teaching the active aspects of the required skills. To be sure, the relationship is often more obvious from the linguistic point of view than it is from the standpoint of general education.

The most complex manifestation of the active skills, normally relevant only at the highest levels of education, is the design of research, experiments, and evaluation schemes, for example in the social sciences, the natural sciences, and in education itself. Yet the basic principles are the same as for the simplest version of the skills: the formulation of specific questions to be answered by specific people. The methodology of carrying out the research, the experiment, or the evaluation exercise may of course vary from discipline to discipline, and the overall research plan may bear very little relation to linguistic skills. But the formulation of the questions themselves embraces many features of grammar, discourse, semantics, and pragmatics which are the legitimate concern of instructional programs in the language in which the questions are to be put and answered.

A natural framework for the development of the skills necessary in planning and responding to interviews and questionnaires is provided by playing certain games in the language or non-language classroom. Games can be organized in almost any subject area by providing individuals or groups of students with sets of answers (which can incidentally be gleaned from reference materials in a separate exercise), and giving other individuals or groups the task of finding the answers without being told what specific questions to ask. Such games range from the simple 'twenty questions' and 'Botticelli' types to highly sophisticated crime detection, geopolitical, and engineering simulations.

The clearest case for the inclusion of such games in language instruction occurs when students must learn to formulate and answer questions in a relatively new language, as is required in many forms of bilingual education and in monolingual education models where the main medium of instruction is not a community language. In any form of education, the case is similar to the use of reference materials (6.4.), and the best solution is often to teach the skills relating to interviews and questionnaires in connection with both language and general instruction.

Not every student, of course, is expected to become a demographer, a military strategist, or a laboratory researcher. But upward mobility in almost any job or profession requires that the incumbent be able to ask questions as well as to answer them. Schools which do not teach the related active skills, linguistic and non-linguistic, can at least consider teaching the correspondinng passive skills with some hope that a transfer will be accomplished later on. Schools which also neglect practice in responding to questionnaires and interviews, on the other hand, might be said to be neglecting a vital part of their students' education. Since some aspects of framing and answering questions are highly language-specific, moreover, it may be necessary to teach these skills separately for each language medium or language subject in the curriculum. This is an important difference separating this area of study skills from the previous one, the use of reference materials.

6.6. Outlines, summaries, and syntheses

After information has been gathered, whether from reference materials (6.4.), from interviews and questionnaires (6.5.), from planned or random observation, or from direct instruction, the problem arises how to present the information to others. The skills involved here are closely related to those used in the relaying of verbal information (6.2.), but with these important differences:

a) Some or all of the information may be from non-verbal sources (see 6.1., 6.3. -- for example, observation of the results of a chemical experiment);
b) Not all of the available information is necessarily relayed, even though it is relevant, and some of the information has to be summarized rather than presented in detail;
c) The presentation must be ordered in some way (for example, introduction, data, analysis, conclusion).

Reports of this kind can be narrative or descriptive, but with regard to the category of study skills discussed in this section they are factual -- that is, the outline, summary, or synthesis is based on some sort of primary or secondary data, rather than on the writer's imagination. Creative writing is not considered a study skill under the taxonomy adopted here, and hortatory or persuasive writing is included under the next section (6.7.). Likewise, if the information reported is all from verbal sources, if it is all included in the report (with only the 'noise' edited out), and if it is presented in the order in which it was obtained, then the result is an example of the relaying of verbal information (6.2., also sometimes called a 'verbatim report' or simply 'a report') and not an example of an outline, a summary, or a synthesis.

The more structured kind of presentation of information we are concerned with here can be in oral or written form, or in both forms, but the essential non-linguistic skills are always the same. These are the skills we have chosen to call synthesizing, summarizing, and outlining.

1) *Synthesizing* refers to the conversion of information, whether verbally or non-verbally obtained and whether from one or from several language media, into a single linguistic communication mode conveyed through a single channel -- usually a standard oral or written version of some single language type, coded in the appropriate narrative or descriptive register.

2) *Summarizing* refers to the selection of important points and the elimination of unnecessary or irrelevant detail; it also refers to the regrouping of data of the same kind obtained at different times. (Note that this is different from the mere elimination of 'noise'.)
3) *Outlining* refers to the ordering of presentation of data and discussion (argument in the non-polemic sense), and also to its classification with regard to main headings and sub-heading (chapters, sections, paragraphs, etc. -- see the table of contents of this book for an example of rigid and symmetrical outlining).

Although these three skills can be separated in theory, and the corresponding products can usually be labelled as syntheses, summaries, or outlines, in practice the skills are nearly always applied simultaneously during the preparation of information to be presented in the form of an oral or written report. This is one reason why outlining, summarizing, and synthesizing cannot be considered as mere linguistic skills but have to be treated as study skills. Another reason is that all three skills may be represented in a report which consists entirely of mathematical, chemical, or other discipline-oriented symbols or abbreviations and contains no conventional written language at all. On the other hand, if we refer to some previous examples we will see how these skills may apply independently and in combinations different from those represented in typical reports.

The waiter, for example (6.2.), may take orders one at a time from each customer at a table, but when he jots the orders down on his pad he may already be *summarizing* -- 'three coffees'. If some of the orders are given non-verbally (for example, a customer points to a steak platter at the next table and holds up one finger to signal 'one order of that'), the waiter will *synthesize* this information onto his pad in written form. When all the orders are in, he will almost certainly report to the cook in *summary* form; if he also reorders the information into a logical sequence (appetizers first, main courses, then desserts), then he has *outlined* as well. In other words, the cook will not get a verbatim report of everything said by the customers at the table in the order in which it was said, and he may get a report of some relevant information which was not verbally conveyed to the waiter.

The passive aspects of the three skills are often combined with the active ones. The student who takes notes on a lecture, for example, can combine the skills in various ways, depending on how methodical he wants to be. Unless he actually knows how to take shorthand, he has to summarize in some way. If the lecturer writes on the blackboard or shows slides, the student has to synthesize these other channel inputs with the basic oral-channel text of the lecture itself into his written notes. If the student knows in advance what topics and sub-topics the lecture is likely to cover, he can prepare an outline (or simply use a predistributed handout in the form of an outline) and fill it in as the lecture progresses. He can do this regardless of the particular order in which the lecturer actually presents the points -- that is, the student's receptive outline need not be the same as the lecturer's active one. At the same time the student must constantly eliminate 'noise' from the lecture, along with irrelevant comments, jokes, repetition, and digression, misspeaking and equipment failure -- some of the same things he must do in performing the simple task of relaying verbal information.

A similar non-educational example comes from the field of forensic pathology. As he dissects a corpse, the forensic pathologist dictates (usually into a tape recorder) a process description (6.3.) of what he is doing and what he sees as he does it. The tape of this process description can be transcribed verbatim by any secretary who is competent in the relevant language medium and who knows the specialized medical vocabulary involved. Such a transcription would be an example of the relaying of verbal information (6.2.), of the specific mode S → W. In order to write a coroner's report from the same data, however, the report-writer will need not only a specialized knowledge of forensic medicine but also the skills of outlining and summarizing. If other data must be incorporated in the report, such as photographs or laboratory results, he will also need the skill of synthesizing.

The question as to when and where the skills of outlining, summarizing, and synthesizing should begin to be taught or acquired in the school is a difficult one. It can be argued that the three basic skills necessary for ordering and presenting information are the most important study skills that the student must learn or acquire at some time during his schooling -- even more important than the information-gathering skills such as the use of reference materials and the design of interviews and questionnaires. This argument can be supported by the typical requirements of general curriculum, and also to some extent those of language curriculum: While the student may have to gather information for many kinds of instructional sequences, on the typical test or examination he must organize and present information under strict time constraints.

From the linguistic point of view, the most vital inputs to the ability to outline, summarize, and synthesize come from the area of semantics, and especially the semantics of discourse. This area, however, is somewhat marginal to our definition of language proficiency (5.8.). It can also be argued that the particular kind of language proficiency most relevant to outlining, summarizing, and synthesizing is less often the result of language instruction, and more often the result of normal cognitive development, stimulated and refined by successful application of the specific study skills to non-linguistic problems -- for example, to the construction of graphs, diagrams, and blueprints, and to the manipulation of mathematical and chemical formulas. The development of these skills, then, is more properly the concern of general curriculum and instruction, according to this argument.

Even if we agree that the development of these skills should begin as early as possible, the question as to where they should be taught or acquired is still very much a chicken-and-egg proposition. Discourse styles are known to be language-specific, and the ability to handle the various styles of discourse in one language medium does not guarantee the ability to handle them in a second language medium, unless the second language is closely related in the genetic and cultural sense to the first (e.g. French and English). If the decision is made to teach the skill relating to the presentation of information in connection with language instruction, it may very well be that they must be taught separately for each language concerned.

If the skills are left to be acquired in connection with general curriculum, on the other hand, there is the danger that some students will not acquire them sufficiently well without explicit instruction, and there is no single subject area (other than language subjects) to which such instruction is logically best suited. The only other important consideration here, as to the timing of the instruction, is that a firm grasp of the first four categories of study skills discussed in this chapter (6.1.-6.4.) is probably prerequisite to the full employment of the skills of outlining, summarizing, and synthesizing. Thus the answer to the question of when and where the skills should be introduced depends on a thorough analysis of both language and general curriculum requirements of the school concerned.

6.7. Argument and persuasion

Of the study skills discussed so far, the language proficiency requirements have been confined to straightforward aspects of pronunciation (and its graphic counterpart, spelling), vocabulary, and grammar (plus discourse). In linguistic terms, the requirements are for a reasonable control of the phonology, lexis, syntax, and semantics of the particular language(s) involved in the exercise of the various skills, and a relatively short channel or proficiency distance for the student with respect to the language media. Up to this point there has been little need for control of the pragmatics and speech acts of any language, or for any great degree of communicative competence in the medium. At most, the need has been for a passive control or competence which would allow the student to relay or interpret information presented in an unusual or non-standard way.

The skills discussed in this section, under the cover term 'argument and persuasion', do however require an active control of pragmatics, plus real communicative (as opposed to linguistic) competence, and this is what makes them so different from the other study skills. Unlike the skills required for outlining, summarizing, and synthesizing, for example (6.6.), the skills involved in arguing and persuading do not presuppose a full control of the other study skills. It is possible to base a successful argument on very little information. In fact, the skilled arguer (though not the formal debater, perhaps) must be able to conceal, minimize, distort, and invent data as well as to present it in a rational manner. The writer of a factual report does not need to have any fixed audience in mind when he presents his information; he may merely assume that anyone who is seriously interested in his subject is a potential reader. The writer of a political diatribe, an advertisement, or a religious polemic, on the other hand, must have a particular audience in mind, because if he does not know the prejudices and beliefs of his potential readers fairly well, he cannot use them to his advantage in persuading this audience.

Thus a knowledge of 'human nature', whatever that might be, becomes more important to the informal debater, the editorialist, and the used car salesman than a knowledge of facts, and control of speech acts and persuasive devices more important than control of grammar as such. To pursue the used car example further, an inventory of facts about the actual performance and present condition of any used car will not help to sell it as much as a quick appraisal and exploitation of the potential buyer's likes and dislikes will.

More than that, the successful persuader, whether he argues orally or in writing, has to consider the language forms most appropriate to his audience. These are not necessarily the standard forms of the language type concerned. It will no longer suffice to confine oneself, either, to the neutral, colorless registers and styles of expository or narrative prose. (The best advertisements, it has been observed, often closely resemble poetry in this respect.) The goal of getting and keeping the audience's attention, in short, outweighs all considerations of linguistic propriety.

The persuader must choose a dialect and register which has the best chance of swaying a particular audience. Most politicians and salesmen either know this instinctively or have it constantly dinned into them by their advisers and trainers. If the skills of outlining, summarizing, and synthesizing can be characterized as psycholinguistic skills, on the grounds that they are largely cognitively acquired and only marginally linguistic, then the skills of arguing a point of view and persuading others to act in a certain way can certainly be called sociolinguistic skills. The used car salesman, even if he does not actually use different dialects in dealing with different customers, is quick to note which kinds of speech acts and persuasive devices each customer reacts to, and varies his verbal repertoires and strategies accordingly.

Many schools have debating clubs or other extracurricular activities of which one purpose is to develop the techniques of oral persuasion and argument, and some schools offer instruction in 'public speaking' (a general curriculum subject, according to our definitions). The emphasis in such activities, however, tends to be on appeals to reason rather than on appeals to emotion. Certain other activities, both inside and outside the classroom, are designed to develop the corresponding skills in writing. For example, school newspapers and 'creative writing' classes often have scope for persuasive and argumentative as well as descriptive and narrative pieces.

The greatest relevance of the skills of argument and persuasion within the school curriculum proper, however, is probably in the subject area we have called fine arts, religion, and acculturation (5.4.). Criticism of literature, music, and painting typically requires a different style of argument from that which we find in connection with the social and natural sciences. In most types of religious instruction the emphasis is on belief as opposed to reasoned judgment, and on persuasion through emotional rather than logical appeal. The same observations also apply, in general, to what we have called 'acculturation'. To the extent that these subjects occupy an important place in the school's general curriculum, the skills relating to argument and persuasion become increasingly relevant.

The nature of these skills is such, however, that if they are to be explicitly taught the best choice is often to teach them in connection with language instruction. It is rare for the skills to be specified in language syllabuses or exemplified in language examinations, to be sure (with the possible exception of communicational and functional/notional approaches -- see 10.5. and 10.6.), but the requirements of general curriculum may outweigh those of language curriculum in this area. And since argument and persuasion, in order to be successful, on a knowledge of pragmatics in a variety of related linguistic codes, the introduction of this kind of language instruction should probably begin only after the more straightforward aspects of the language in question are well under control. For a monolingual school in which most students are native speakers of the language medium, of course, the instruction can begin quite early.

6.8. Translating, interpreting, and paraphrasing

Finally, the skills of translating, interpreting, and paraphrasing also have to be considered as partly non-linguistic in nature. The linguistic aspects of translation and interpretation have already been touched on (5.1.), and so these two skills will be discussed first. Translating and interpreting are the only study skills which definitely require proficiency in more than one language type, and they are of course more relevant to bilingual and multilingual models of education than to monolingual ones. Argument, persuasion, and paraphrasing may likewise require control of different dialects, registers, and styles, but in translating and interpreting this argument is magnified, because the language variety distance (3.8., 4.3.) between the two media involved is always greater.

In another sense, however, the skills of translating, interpreting and paraphrasing are all comparable to the first and simplest category of study skills, the production and interpretation of graphic and visual displays (6.1.). The transfer from non-verbal to verbal channels (and vice versa) parallels in many ways the transfer from one language medium to another. For example, the new product, in either case, can never match the original perfectly. As Mark Twain hilariously demonstrated in his story 'The Celebrated Jumping Frog of Calaveras County', a text translated from Language X to Language Y and then translated back into Language X may become almost unrecognizable. So it is with a visual display interpreted in words which then becomes the description from which another person attempts to reconstruct the visual display. This is true despite the fact that visual channel inputs to texts are among the most easily described in words -- as compared with non-verbal sounds, tastes, odors, and tactile sensations, for example. Thus the fit between two different media, even two which are separated by considerable language variety distance, may be no worse than the fit between verbal and non-verbal representations of the 'same' concept. It is the degree of mastery of the media, or of proficiency in the two language varieties concerned, that is crucial.

Experienced translators and interpreters know that their craft is as much an art as a science. Given adequate proficiency in the two languages, the essence of the art is to know when to give a literal translation or interpretation and when not to. The instructions for assembling a toy may be a clear case for literal translation, and a play on words may be a clear case against it, but in between these two extremes lie many decisions which the translator or interpreter is constantly called upon to make. He needs to know not only the two languages concerned, but two cultures as well, and above all he needs to be familiar with the subject matter to be translated. (There is a parallel here also with the verbal interpretation of non-verbal text features: A phonetician, for example, can give a better description of the sound of disapproval usually spelt 'tsk, tsk' than the average person can, at least in terms of its manner of production.)

It is this last requirement, familiarity with the subject matter, which would by itself prevent the skills of interpreting and translating from being classified as purely linguistic skills. Sometimes even a literal translation is ruled out by lack of fit between languages, and special background knowledge is required to solve the translation problem. There would be no way at all, for example, for an interpreter to render the English expression 'President Kennedy's brother' in Thai or Vietnamese unless he happened to know which brother was the elder -- the President, or the brother referred to. This sort of thing, like the necessary decisions about literal translation when it is feasible, comes up all the time between language types for which the great variety distance reflects cultural distance as well, as in the case of English and Thai or Vietnamese.

Paraphrasing can be considered as a special case of translation or interpretation, in which both stimulus and response belong to the same language type or variety. There may be a switch from one dialect, social lect, or code to another, but the main language type remains unchanged in the process of paraphrasing. Since both the stimulus for the paraphrase and the paraphrase itself may be either oral or written, there are four different modes of paraphrasing, comparable to translating, interpreting, and the two unnamed skills associated with them (see 5.1.). We can show this clearly in the following array, in which X represents the stimulus medium and Y a language different from X.

Interpreting/Translating		Paraphrasing
(1) 'Interpreting'	XS → YS	XS → XS
(2) 'Translating'	XW → YW	XW → XW
(3) (Unnamed skill)	XS → YW	XS → XW
(4) (Unnamed skill)	XW → YS	XW → XS

When the paraphraser acts as an agent, linking two or more other communicators, he is playing exactly the same role as the translator or the interpreter, and his channel distances in medium X (though not in both X and Y) become relevant in the same way. But the paraphraser does not always act as an agent -- he may, in fact, paraphrase parts of a message which he himself originated. In such a case, he does not need to go through the extra steps (e.g. XW - XR, XS - XU, etc.), because he will have gone through them already in formulating the original message; since the self-paraphraser is in control of both ends of the oral or written channel, so to speak, there is no channel distance involved.

This last point effectively distinguishes paraphrasing from relaying verbal information, as shown by the following array (adapted from 6.2.), in which the message originator is symbolized by *o* and the relayer by *r*.

Relaying information	Paraphrasing	Function of the paraphrase
(1) XSo - XWr → XSr	XSo → XSo	Restating own oral message
(2) XWo - XRr → XWr	XWo → XWo	Rewriting own message
(3) XSo - XWr → XWr	XSo → Xwo	Clarifying own message in writing
(4) XWo - XRr XSr	XWo → XSo	Clarifying own written message orally

If the paraphraser is acting as an agent between two or more other communicators, of course, then the skills of paraphrasing and relaying verbal information become superficially alike in that they can both be represented, in terms of processing, by the formulas at the left in the above display. But there is still another important difference between the two skills, even in such cases. In the relaying of verbal information, the message content is not supposed to be altered (except for editing out obvious 'noise'), while in paraphrasing there is a deliberate intent to restate, rewrite, or otherwise clarify the content of a message which has probably not been understood in the first place -- in other words (paraphrase!), to render the content of the original message in a *different* surface form.

Just as in translating or interpreting, a deliberate choice must always be made between *literal* and *free* paraphrasing, whereas the relayer of verbal information is always supposed to be literal. The paraphrase chosen can be more technical and formal than the original, or it can be less so, depending only on the intended audience and the purpose of the alteration. For these reasons, paraphrasing is grouped with the skills of translating and interpreting, rather than being considered as a special case of the relaying of verbal information. Self-translating and self-interpreting are possible, and occasionally relevant; moreover, the only real diference between paraphrasing and the translingual skills has to do with the language variety distance involved, and not with the communication function itself.

In both language instruction and general instruction, paraphrasing by teachers is in fact a very common technique. The teacher's paraphrase may be of some portion of his own verbal message, or it may be of some portion of an instructional text which he did not originate. The same thing is true, of course, of translating and interpreting by language and general teachers. In language instruction, many drills to be performed by students also explicitly require the exercise of the skill of paraphrasing. (In one sense, transformational-generative grammar itself depends on tacit agreement among native speakers of a given language variety as to what constitutes a viable paraphrase in that language.)

The non-linguistic aspect of paraphrasing lies in the ability to recognize equivalence of content as well as the equivalence of particular syntactic constructions and lexical relationships. (This is also true, of course, of translating and interpreting.) In example (a) below, only linguistic knowledge is required to judge the accuracy of the paraphrase; in example (b), something more is required:

(a) Ken is taller than Larry = Larry is shorter than Ken.
(b) Jesus the Savior is risen = Christ the Redeemer has risen from the dead.

In addition to possessing the necessary background information, the paraphraser who is acting as an agent facilitating communication between other persons, like the translator or interpreter, must also be able to judge his audience's background and linguistic potential in selecting the most appropriate form for a paraphrase. In this sense, he must be communicatively competent as well as linguistically competent, as in the case of translating, interpreting and producing or interpreting visual displays (6.1.); moreover, there is no guarantee that a given paraphrase can be 'paraphrased back' to its original form by a different person.

If translating, interpreting, and paraphrasing are non-linguistic as well as linguistic skills, where and when should they be taught? Every teacher in a bilingual or multilingual school, whether a language teacher or not, is a potential translator and interpreter, and so is every student, unless the instructional programs and materials are planned right down to the last detail. Every teacher and student in a monolingual school is a potential paraphraser, and if the medium of instruction in the school is different from the community language, he is also a potential translator and interpreter. Apart from those who take up translating, interpreting, and language teaching as professions, who should be taught these skills, and when and where should they be taught? The answers to such questions depend on the resources available to schools and programs in which more than one language variety is relevant.

The simplest kind of answer is that when it is known that teachers and students in fact have to translate, interpret, and paraphrase at some point during nearly every instructional sequence, they might as well learn to do it systematically rather than haphazardly. And, as in the case of argument and persuasion (6.7.), the place to teach techniques of translating, interpreting, and paraphrasing is probably in language subjects rather than in general curriculum. This judgment in turn implies that while general teachers only need to know how to translate, interpret, and paraphrase intelligently, language teachers should also be trained to give instruction in these skills. For various groups of students, the instruction should obviously be delayed until reasonable proficiency in the languages concerned has been attained, except in the special case where the 'translation method' (see 10.1.) has been selected, or is the only available alternative, for teaching a new language.

If the kind of answer given in the preceding paragraph is adopted by a whole school system, moreover, the problem of engineering the translating, interpreting, and paraphrasing skills of *general* teachers will also be amenable to solution over time. Since general teachers are themselves products of school systems and will have undergone language instruction in the relevant school media as students, there should be no need to train them further in these skills. Only the problem of training *language* teachers to give instruction in the skills of paraphrasing, interpreting, and translating will remain.

CHAPTER 7

READING AND THE PASSIVE SKILLS

7.1. Listening skills
7.2. What is reading?
7.3. Mechanics
7.4. Comprehension
7.5. Literacy distance
7.6. Types of reading materials
7.7. Text analysis
7.8. Reading and listening levels

A great deal of nonsense has been written on the subject of reading, most of it during the present century. At best, reading is a complex subject, but when it becomes confused with study skills, cognitive development, individual experience and creativity, the complexity increases geometrically -- and, quite probably, unnecessarily. So much of modern education depends on the student's ability to read (whatever that means) that reading has even been confused with the total strategy of independent learning, without any assistance from teachers. It is not surprising that so much attention has been given to the subject of reading by educational philosophers, psychologists, and other researchers, however. What is less understandable is why so many reading experts fail to realize that much of what they include under this heading has no right to be so included. Even if everything that has been called 'reading' could be pulled together under one theoretical or pedagogical domain, no single person would have the discipline-specific knowledge necessary to synthesize it all. Yet both linguists and non-linguists have made the mistake of believing themselves to be competent enough, outside their own fields, to attempt a synthesis of the entire reading process.

This kind of mistake can be avoided here, it is hoped, by sticking to the linguistic aspects of reading as much as possible. The present chapter therefore attempts to discuss the main problems in decoding or deciphering the written media in the channels of instruction as they occur in schools. The linguistic approach to reading is not new, and if anything, has been oversold in an underdeveloped form. In Section 7.2., a linguistic definition is attempted, based on the obvious link with oral comprehension that reading comprehension implies. But this is a definition tailored for the purposes of this book, and does not purport to cover everything that anybody might want to call 'reading' (as some definitions purport to do). A distinction between reading mechanics and reading comprehension then makes it possible to compare the latter directly with oral comprehension. With the aid of a new measure, derived from this comparison, called 'literacy distance', one can show how text analysis can be applied with equal consistency to both oral and written media of instruction and to the materials used in language instruction, and how the grading and sequencing of such texts can be interrelated.

7.1. **Listening skills**

In Chapters 5 and 6 a distinction was drawn between the passive linguistic skills of understanding spoken language and reading on the one hand, and the related study skills, such as interpreting visual displays, using reference materials, summarizing, and note-taking, on the other. Up to this point, we have regarded the understanding of spoken language simply as one of the four basic linguistic skills, measurable in terms of performance. There is a case to be made, however, for considering that there are separate component skills involved even in the simple act of listening to spoken language, and that some of these separate skills may be neither clearly linguistic nor clearly study skills. Some of these component skills, whatever they are, are obviously developed by very young children before they have been exposed to schooling, and before they have had time to acquire very much individual experience or cognitive development. The skill of inferencing from context, for example, which has been cited by many as one of the keystones of reading competence, is obviously also relevant to even the simplest act of listening to spoken language.

Whatever the component skills of listening are, it is certainly in the interests of students in schools to develop them further, because much of their instruction comes to them through the oral channels. This observation applies regardless of the language variety distance involved -- that is, at least some of the component skills of listening must be transferable from a familiar language to an unfamiliar one. Listening to a tape-recorded voice, for example, is not the same as listening to the voice of a person who is physically present; nor is it even the same as listening to a live broadcast voice, because the student knows he can reverse the tape if he has missed something. Listening to a tape played at twice normal speed is not the same as listening to the same tape played at normal speed or half speed, and listening with one's full attention on the speaker is not the same as selective listening or hearing the oral message with part of one's attention on something else, and so forth.

In a great many cases, the options in listening to speech quite closely parallel the options available for reading written texts. When the written text is presented through channels such as projected slides, film-strips, television captions and film subtitles, rollboards or slotboards, the text has to be caught by the student as it goes past, just like live or broadcast speech. When the oral text is recorded, the listener has essentially the same options as the reader has when he elects to go backward or forward to another portion of the book he is reading, or to skim, scan, speed-read, or pause and day-dream as well as to read the book in its normal progression at a steady pace. In both listening and reading there are equivalent options for giving full, partial or no attention to the text at any given time, and for treating many other variables in the reception of messages (as shown in the chart that follows).

Since recordings can be made of any stretch of spoken language, live or broadcast, and since it is not too far-fetched to imagine future students carrying portable tape-recorders, telephone terminals, and radio receivers around with them, there is also a case to be made for regarding any material presented through an oral channel as potentially equivalent to the corresponding written form. The technology presently being developed in the fields of speech synthesis, 'talking computers', and electronic equipment that responds to oral commands, in fact, makes such an assumption unavoidable in considering the instructional channels of the education of the future. And there is no good reason not to make this assumption in advance, although the technological capability of the typical school today still dictates that the great majority of recoverable instructional text will necessarily be in written form.

The parallelism of the passive skills is further emphasized by certain other considerations. Any text that is written down can also be read aloud (but see the next section for the linguistic implications of reading aloud). Any text presented through an oral channel can not only be recorded on tape, but all of its significant linguistic features can also be transcribed on paper -- although no conventional writing system accomplishes this, a phonological analysis of the language variety concerned makes it possible. Kinesic, proxemic, and other inaudible features of speech acts and events can not only be observed visually, but can be represented on paper in various ways -- in conventional writing, for example, by describing not only the utterance but its manner of delivery; in transcription, through the use of systematic symbolization. Because of the mutual convertibility of oral and written texts, then, we would expect to find that whatever skills are involved in listening will parallel at least some of the skills used in reading. This match-up will subsequently be of great value in defining what it means to 'read' (7.2.), in the linguistic sense.

A tabulation of the variables in the act of listening to speech is arrayed below alongside the corresponding reading variables, in order to point out these parallels very clearly.

'Passive' Variables	Oral Channels (Listening)	Written Channels (Reading)
1. Message rate and recoverability	1.1. Non-recorded speech: rate not controlled by listener; non-recoverable message	1.1. Temporary text display: speed of display not controlled by reader; non-recoverable text
	1.2. Recorded speech: rate only partially controlled by listener; recoverable message	1.2. Normal written text: rate of scanning and recover fully controlled by reader
2. Channel noise and volume/ brilliance	2.1. Channel interference: electronic or natural noise	2.1. Channel interference: misprints, illegible

		handwriting, etc.
	2.2. Background interference: wrong volume, pitch, etc.	2.2. Background interference: too bright, dim, or flickering light, etc.
	2.3. Speaker-produced gaps, errors, self-corrections, or non-linguistic sounds	2.3. Writer-produced gaps, errors, self-corrections, or non-linguistics marks
3. Message consumer variables: what the listener or reader contributes to the interpretation of message	3.1. Listener's linguistic and communicative competence	3.1. Reader's linguistic and communicative competence
	3.2. Familiarity with context: individual experience of listener	3.2. Familiarity with context: experience of reader
	3.3. Cognitive skills	3.3. Cognitive skills
	3.4. Ability to infer from context	3.4. Ability to infer from context
	3.5. Attention, set, motivation, and selectivity of listening	3.5. Attention, set, motivation, and selectivity of reading

	3.6. Familiarity with speaking style used	3.6. Familiarity with writing style used
	3.7. Perception and short-term memory; ability to hear and recall stretches of speech	3.7. Perception and short-term memory: ability to see and recall grapphic sequences
4. Comprehension task variables: what the listener or reader does with his version of the message	4.1. Acceptance of message as it stands.	4.1. Acceptance of message as it stands
	4.2. Asking speaker for clarification or for different volume or rate (often possible)	4.2. Asking writer for clarification or more legible message (not often possible)
	4.3. Other feedback (e.g. oral reply)	4.3. Other feedback (e.g. written reply

From this tabulation we can see that the only important differences in the variables of the oral and written channels, or for listening and reading, occur at 1.2 and 4.2. While the rate and volume of speech reception can only be partially controlled by the listener, even in the case of recorded speech and when sophisticated electronic equipment is available, the rate and conditions of focussing one's attention on a normal written text are entirely up to the reader himself. On the other hand, the listener is more often than the reader in a position to ask the message originator to repeat, paraphrase, or clarify the message, and he can also ask the message originator to speak slower, faster, louder, or more softly, etc. Although the rate of reception of normal written material, and even the amount of light on the text page, can be fully controlled by the reader, he seldom has the opportunity, in situations he so controls, to ask the writer to clarify the text, either visually or verbally.

Assuming that the oral and written versions of a given school language medium are otherwise equally intelligible to the student, because they are in one sense mutually convertible, the two differences noted above are obviously of great importance in the choice of a particular channel of instruction. Whether a given sequence of instruction is delivered through live speech, recorded speech, broadcast speech, packaged written text, displayed written text, or individual handouts, or any combination of these channels, becomes of paramount importance to the effectiveness of the instruction. Otherwise, the skills involved in listening and reading are totally comparable in the linguistic sense. The extent to which oral and written texts in the same language medium are *theoretically* convertible is explored in the next section, but their practical convertibility in the school context scarcely needs to be questioned.

7.2. **What is reading?**

We are now ready to define the reading process, for the purposes of further discussion of the 'passive' language skills in education. Although the receptive processing of texts conveyed through the various oral and written channels exhibits numerous similarities, as we have just seen, there remains one major difference: Reading always involves an extra step of *decoding* or *deciphering*. (Whether decoding or deciphering is the better term depends on individual characteristics of the language variety concerned; for the time being this distinction can be ignored.) Some reading analysts apparently believe that written texts are somehow directly absorbed by the brain. Others are of the opinion that the speech-processing channels are invariably involved in reading in some way. This difference of opinion too can be ignored, because obviously some kind of decoding or deciphering is always involved in the reading process, no matter what the nature of the writing system is. Otherwise, deaf mutes would be infinitely more educable than blind people, and all children (not merely a gifted and possibly abnormal minority) could learn to read before they learned to speak. And otherwise, there would be many more instances than there are, historically speaking, of ethnic communities developing a common standard written language without some kind of an oral base.

One other important difference between oral and written language remains to be considered: This is the incomplete convertibility between the two types of codes, which holds to the same degree for all known language varieties that have developed conventional writing systems. Existing alphabets, syllabaries, and logographic systems (such as the Chinese/Japanese characters) all have their peculiar imperfections, and in no standard writing system does punctuation effectively convey certain intonational, rhythmic, and other phonological features of spoken language. While it may be theoretically possible to represent on paper all the distinctive phonetic features of a spoken language variety that has been completely analyzed, in practice this never happens, and all orthographic systems are defective in some respect. Hence all of the phonetic information conveyed through the oral channels cannot be represented in the conventional written channels of any language variety.

Conversely, it is impossible to represent in speech all the *semantic* information conveyed by the typical writing system. To take an English example, the spellings 'right' and 'write' convey more meaning by themselves, out of context, than do the homonymous pronunciations of the two words. The quotation marks around these words (whatever the marks mean) can of course be represented by gestures accompanying their pronunciation or be otherwise signalled (quote right unquote), just as any word that can be written can be spelled out orally. But in normal oral communication, much of the semantic information contained in the writing system is omitted, or ambiguously represented. If we repunctuate our examples as "Write?" "Right!" the two-way inconvertibility of English writing and speech is neatly illustrated -- no matter how we pronounce these two graphs some of the semantic information will be missing, and no matter how we spell and punctuate the corresponding utterances some of the phonetic information will be missing.

What about the so-called 'phonetic' writing systems that certain languages are alleged to have? No matter how close the fit between pronunciation and orthography is for a given standard language (e.g. Italian, Spanish, Malay), the lack of mutual convertibility persists in some way. This means that any written text can be read aloud in different ways, even by the same reader -- at different speeds or tempos, with different rhythm or phrasing, with different emphasis and intonation, and sometimes even incorporating different pronunciations of the 'same' word (e.g. for some American English speakers, 'already' can be stressed on either its first or second syllable, depending on its position in the sentence). But fully competent, literate users of the language will normally record a given oral text in almost exactly the same way, providing the oral medium is a standard one and barring minor details of punctuation. The missing semantic information in the oral version can easily be *reconstructed* by the hearer who knows the language well. But the missing phonetic detail in a written text has to be supplied in some way by the native speaker who reads it aloud, and there are *always* a number of different options in supplying it.

In the silent decoding or deciphering of a text, as opposed to reading it aloud, something very similar has to happen, whether the reader is aware of the process or not. It is not possible, for example, to read the following newspaper headline, even silently, without supplying some specific emphasis, either semantic or phonetic.

Call Girls' Numbers Up, Says Governor

Unless we know whether the governor's primary concern is the suppression of prostitution, female military conscription, or mere telephonic mischief, the written headline gives no clue as to its proper interpretation. But it can be read aloud to give prominence to any one of these three plausible meanings, simply by putting the primary stress on the first, second, or third words respectively. Thus silent reading shares with reading aloud the *possibility* of different linguistic decoding or deciphering procedures, even though these procedures may not be explicitly or consciously undertaken by the skilled silent reader. Another way of stating this principle is to consider all written texts as potentially more ambiguous than comparable oral texts. Spoken language can, of course, be ambiguous, but it never approaches the degree of ambiguity that is inherent in any text written in a conventional orthography. Legal language, for example, cumbersome and redundant as it is, is usually meant to be read rather than heard, but it still needs the courts to interpret its meaning.

We now apply the above observations to a linguistic definition of *literacy* as follows: Literacy is the ability to convert any text written in the conventional orthography of some standard language into one or more standard oral versions which are comprehensible to the person who performs the conversion (i.e. the reader) *to the same degree* that these oral versions would be if vocalized in the same form by a different speaker of the same standard language. In other words, a person is literate if he can read a text aloud and understand it just as well as if it were spoken to him by someone else. Note that this definition of literacy makes a clear distinction between the deciphering or decoding process and the comprehension of what is written, and is based not on some kind of 'competence' but an actual performance. The degree of literacy that a given individual possesses with respect to a given standard language, moreover, can be empirically established through various simple tests.

This definition does not imply that the literate person 'understands' everything he reads. It only implies that he must understand any text as well as he would if it were spoken to him -- for some texts, this level of comprehension might well be near zero. Neither does the definition imply that the reader goes through a process of vocalization whenever he reads. But the literate person *can* vocalize the text, if need be, and he must understand at least some parts of some written texts, because otherwise he would lack any sort of competence in the oral version of the language concerned. Most importantly (and perhaps controversially) the definition does not preclude the possibility that there are those who can comprehend texts written in a standard orthography without being literate in the language concerned -- for example, there are said to be

Japanese who can 'read' (i.e. understand) Chinese without having any idea what the spoken language sounds like; such people would be illiterate in Chinese by our definition, because literacy presupposes oral comprehension.

In any case, this definition of literacy opens the way to treating reading comprehension and listening comprehension as nearly identical phenomena, with only the degree of literacy and those differences noted in Section 7.1. distinguishing them. Literacy can be considered as one of the essential components of *reading competence*. Reading competence requires, first of all, the ability to decipher or decode a written text into oral form (literacy) and, secondly, a degree of linguistic competence in the language medium of the oral text that results from the decoding or deciphering. What the literate person actually does with a given written text at a given time is *reading performance* -- the same thing that many people would like to call 'reading' itself. The behavioral manifestation of reading performance may be visible or not (lip movement or brow wrinkling); it may be audible or not; behavior stimulated by reading may be instantaneous or long delayed; non-observable phenomena such as mental activity may involve inferring from context or it may not. *Comprehension* of what is read has to do with both channel distance (6.4.) and text difficulty (6.7.), and can be treated in exactly the same terms as comprehension of spoken language. Anything beyond channel distance and text difficulty, in our terms, has to do with study skills, cognitive development, personal experience, or creativity -- all the beloved and sacred cows of the philosophers of reading.

When convenient, we can also use the term *reading proficiency* in a way analogous to language proficiency (5.8.), since evidence of reading competence (including literacy, as defined) can only be obtained through some kind of performance on the part of the literate person. What was meant by the symbol 'R' in previous formulas of distance (e.g. 4.3.) is now revealed to be reading proficiency, because the assumption was made that the student's version of a given written text could somehow be identified and compared with the original text. This can only be done by making the student perform in some way. We now see the relationship between listening proficiency ('U') and reading proficiency in terms of the following formula, in which 'L' stands for literacy:

$$R = U + L$$

All three of the letter symbols in this formula represent competences which can be tested and quantified independently. But the above equation implies more than that: It implies that if we can test two kinds of competence -- say, understanding and literacy or reading and literacy -- we can then deduce the value of the third term. The equation thus becomes of primary importance in language testing, and especially in the measurement of language proficiency (9.8.).

Competence implies knowledge of a system of rules, and performance has to do with applying that knowledge. If reading competence has two distinct components, understanding and literacy, then there must be two different systems involved. We will call the system of rules which it is necessary to know in order to be literate in a given standard written language the *mechanics* of that language, and the system of rules through which one comprehends what is written or spoken in that language can be treated, for the time being, as the linguistic description of the particular language variety concerned. The term *comprehension*, then, can be reserved for the reader's or listener's (non-linguistic) version of what has been written or said. But since both terms, mechanics and comprehension, occur also in popular usage, a separate section of this chapter is devoted to each.

7.3. **Mechanics**

The distinction between reading mechanics and reading comprehension is difficult for some people to understand because of the existence of writing systems like those used for English and Chinese. If all written languages were more like Malay, Spanish, or Turkish, there would be much less argument about what reading is. Not only are Chinese and English written with very cumbersome graphic systems (one logographic and the other only historically alphabetic), but many different speech varieties, widely separated both as to time-period and geographical distribution, in many different styles and registers all masquerade under the same labels -- viz. 'Chinese' and 'English'.

In order to demonstrate basic literacy in English, it is necessary to *contextualize* as well as to encipher and decipher the written language. Even a word like 'read' itself has to be read in two different ways, depending on its voice and tense, and the relevant form of the verb can only be deduced (as you just did) from the context. Conversely, if we hear a word like 'reed' or 'red' in spoken English, we won't know how to spell it until we have understood at least part of the context. The equivalent examples in Chinese or Japanese are even more convincing. In Chinese there is not much hope of enciphering or deciphering, because the 'phonetic' part of a Chinese character may be misleading or missing; in encoding and decoding, context is extremely important. Written Japanese, uses a mixture of Chinese characters and two different syllabaries; the syllabaries are easily enciphered and deciphered but the encoding and decoding of character symbols involves phonetic and semantic variants which can only be deduced from context. The two characters used to write the name of the country itself, for example, each have several 'readings' -- i.e. possibilities of phonetic and semantic variation, which to some extent are independent of each other:

Character	Pronunciation		Possible meanings
日	nichi	hi	day (= not night)
	jitsu	pi	sun, sunlight
	ni	bi	day of the week
	nix (nip, nit,nik)		
本	hon	moto	origin, source, etc.
	pon		base, basis
	bon		book, volume

In both Chinese and Japanese, these two characters in this order usually signify 'Japan' -- e.g. *Yiben* in Mandarin and *Nippon* or *Nihon* in Japanese. In both languages, however, it is possible to have phrases and sentences in which the two characters belong to different constituents -- i.e. the first character is to be read as part of what precedes and the second character as part of what follows. In Japanese, for example, the sequence:

朝日本部 (read left to right)

is pronounced *Asahi hombu* and has nothing to do with the concept of 'Japan' (it means 'the head office of the Asahi Company').

Contextualization, therefore, sometimes also involves *immediate constituent analysis*. In the English newspaper headline previously cited:

Call Girls' Numbers Up, Says Governor

the reader must decide whether 'Call Girls' forms a unit or constituent or whether 'Girls' Numbers' forms a unit; in the latter case, 'Call.... Up' becomes a constituent straddling it; and so on. An even clearer example of how immediate constituent analysis can affect the *pronunciation* of a graphic sequence is the following:

Have you ever seen her lead soldiers?

The steel band needs a lead guitar player.

For languages like English, Chinese, and Japanese, it is very difficult to separate the *mechanical* skills of reading from the *comprehension* skills. For a language like Malay, however, such a distinction is quite feasible (though not perfect, because of immediate constituency problems like those just illustrated). If we set aside the older Malay literature and the Jawi script for the time being, and define Malay as the language written in the Roman alphabet that is used as a medium of instruction in schools in Malaysia and elsewhere, the distinction is obvious. There are very few words in Malay for which the pronunciation cannot be predicted from the spelling. There are even fewer words for which the spelling cannot be predicted from the pronunciation. In other words, the convertibility of the written and oral versions of the standard language is of a very high degree.

Thus it is possible for a person with very little fluency in spoken Malay to 'read' something aloud and make it more or less understandable to a native speaker. It is also possible for such a person to take down a Malay dictation, with suitable pauses for writing provided, without any understanding of the content of the dictation. This is because the mechanical aspects of reading and writing Malay are quite easily mastered. On the other hand, a fluent speaker of Malay who has not mastered the mechanics is said to be illiterate. In fact, it sometimes happens in the real world of communication that two such people, the literate non-speaker and the illiterate speaker, combine forces to perform a reading act -- for example, the foreign employer reads aloud a letter his servant has received from a relative in another city. Such a reading act confirms the separation of literacy (L) and comprehension (U) of our previous formula -- if we symbolize the master as *m* and the servant as *s* the equation becomes:

$$\mathrm{MRms} = \mathrm{MUs} + \mathrm{MLm}$$

The success of this joint reading act, (MRms) if the equation is correct, will depend entirely on the degree of literacy in Malay of the master (MLm) and the degree of understanding of the spoken Malay language of the servant (MUs). Even if the equation itself is challenged, there can be no explanation for the joint reading act except some other equation like it. This is essentially the rationale for the linguistic analysis of reading presented in this section.

There are many sub-skills, of course, which are involved in the mechanics of reading and writing a language like Malay in the Roman alphabet. Such things as visual and auditory discrimination, recognizing sound-symbol correspondences, matching capital and small forms of letters, syllabification, accentuation, and the rules for pronouncing vowel symbols in different contexts, for example, are all sub-skills necessary to becoming literate; they can be acquired, learned, taught, or tested separately if need be. But the *terminal* mechanical skills are easily defined, as follows:

(1) To look at any Malay word (i.e. graph with spaces on either side of it) of whatever length, and pronounce it acceptably;

(2) To identify words out of a continuous stream of sound and write them down, if not correctly, at least so that they cannot be mistaken for other words.

Note that the word 'meaning' does not occur at all in these definitions.

In any actual test of literacy, or of the integrated mastery of the details of mechanics, of course, only two other variables need to be considered. These are the first two variables listed in Section 7.1.: (a), the rate and recoverability of the message itself, and the speed at which the conversion task is accomplished; (b) the amount of channel noise, including interference, volume, and freedom from errors of the message. The remaining variables, such as the message consumer and comprehension task variables, are irrelevant to mechanics and hence to literacy. Message consumer variables affect listening and reading comprehension in equal measure, and the comprehension task is neutralized by the simple requirements of the test of literacy. In a demonstration of passive literacy, (1) above, the task is simply to pronounce individual words. In a demonstration of active literacy, (2), it is to spell them. In measuring the degree of integrative mastery of the mechanical skills, therefore -- for example, in testing primary school children -- the definitions given above may have to be made more specific, by adding such expressions as 'clearly printed' to (1) or 'clearly pronounced at normal speed' to (2) or 'within ten seconds of receiving the stimulus' to either (1) or (2).

It has been observed that the two terminal skills thus defined imply certain sub-skills. Now comes the most important consideration with regard to the mastery of mechanics of writing systems, from the point of view of language instruction. Whether the student learns the sub-skills step by step, or whether he goes directly to the syllable, the whole word, or the whole sentence is immaterial to the definition of literacy. Whether the student memorizes long lists of words, applies rules given to him by a teacher, or deduces his own rules from the examples offered him is also immaterial. We already know that different kinds of students learn in different ways, and that a successful teaching method or learning strategy for one child may be poison for another. But until the student arrives *somehow* at the terminal integrative skills defined above he remains partially illiterate in the mechanical sense.

Therefore the question 'What is the best way to teach reading?' does not deserve an answer until 'reading' has been defined in terms of *measurable* skills. And it is difficult to see how any definition of reading could fail to include in it a definition of literacy much like the one presented here.

Mechanics, as we have said, is the system which it is necessary to control in order to be literate in a given language. A complete mastery of mechanics alone will not make a person competent to read, but it is independently testable. This same proficiency in mechanics is one of the components in writing proficiency, as we shall see later (8.4.). The ability to take dictation of individual words will not by itself enable a student to perform as a creative or communicative writer, but it stands in the same relation to writing as the ability to read aloud does to reading comprehension.

7.4. Comprehension

Incomplete mastery of the mechanical skills of reading does not necessarily prevent a high degree of comprehension of written texts. In the normal case, however, it does slow up the development of comprehension skills, because many of these skills depend on the ability to guess or infer from written texts containing unfamiliar words, and the reader's success in guessing at such words depends partly on his mastery of mechanics. Complete mastery of the mechanical skills (or perfect literacy, in our sense), on the other hand, makes one important thing possible: The degree of reading comprehension is theoretically limited only by the degree of oral comprehension, and nothing else. That is to say, the student should be able to understand anything written on paper which he would understand if it were read aloud to him by another literate person. Moreover if the student becomes a speed reader, he can process the information (i.e. decode or decipher it) much faster than it could ever be delivered to him orally.

A lot of what has been written about 'reading comprehension' fails to take into account the role which oral linguistic competence plays in the understanding of written texts. It is, of course, possible to extract much of the meaning of a written text, or even to write a comprehensible text, without going through the *overt medium* of the spoken language. Fast readers and writers seem to do this routinely. People have learned to 'read' Chinese without having any idea of how it sounds. Algebraic and chemical formulas are thought to be non-linguistic, yet such formulas are obviously meaningful to those who have the individual experience necessary to interpret them, and no amount of linguistic competence can substitute for this special kind of experience. From examples like these it has often been concluded that a direct transfer of meaning from the printed page to the human brain is *always* possible.

But it is equally clear that some kind of decoding or deciphering step is very often involved in interpreting marks on paper. A column of figures can be mentally summed by people who are used to doing this sort of thing, but many people will rely on the language in which they first learned arithmetic to perform this operation. In any case, the decoding or deciphering step need not follow the same precise channels that the direct comprehension of oral language follows, but the oral channels are always latently present, ready for use.

Another myth about reading comprehension is that it can be measured accurately. The trouble with this view is that any test of reading comprehension (or of oral comprehension, for that matter) is automatically invalid if it allows a score of

100%. Comprehension is *always* relative to some norm, and perfect comprehension does not exist. As was implied in our definition of language proficiency (5.8.), the educated native speaker provides a possible norm to measure comprehension against, but native speakers themselves will obviously vary in their ability to comprehend a given text. Comprehension, of oral as well as written texts, depends on at least three independently variable factors;

(1) Fluency in the language medium of the text (language proficiency)
(2) Psychological factors: cognitive development, imagination, creativity, etc.
(3) Individual experience of the hearer or reader

It is this third factor, individual experience, which is most often left out of the formula. Obviously, a person who re-reads a certain novel at age 40 will get more meaning out of it (comprehend it better) than he got by reading it at age 20, simply because he now has more experience to draw upon in interpreting the text, and more personal knowledge to relate the content of the novel to. This will be true even if his language proficiency, cognitive development, and other psychological characteristics have remained relatively constant, and even if he has added no new words to his vocabulary since the age of 20. Similarly, the experienced nuclear engineer will get more meaning out of a scientific abstract in his field than any beginning science student could ever hope to, and so forth. But nobody, regardless of age or experience, can be said to comprehend any text perfectly, with the possible (and theoretical) exception of the person who created the text in the first place. Even for the text creator himself, there may be room for improvement, and for all other consumers, there always is.

Most tests of 'comprehension', whether constructed by linguists, reading experts, or testing specialists, are in fact tests of the skills of paraphrasing, synthesizing, or summarizing (6.8., 6.6.), or some combination of these skills. A student who is asked to extract 'the main idea' from a paragraph can sometimes perform this task to the satisfaction of the tester without comprehending a single sentence in the paragraph very well. Another student, asked to pick the correct paraphrase (or synonym) of a sentence, expression, or word from a choice of five options, may do so without understanding either the original item or the paraphrase very well. And in both these cases, the very good student, who knows more than he needs to know to get the 'right answer', will not have this superior knowledge evaluated in any way. Students who construct their own paraphrases, syntheses, or summaries, on the other hand, can never demonstrate 100% comprehension either, because if the examiner admits 100% comprehension, what is he going to do when an even better answer comes along?

Tests of reading and oral comprehension, of course, can be evaluated for reliability and several different kinds of validity. But they can never be valid in the ultimate sense, because the range of human experience is not finite -- or at least, it is not yet finite. The semantic coding system of a given language variety may ultimately be shown to be finite, but no natural language can codify experience into small enough bits so that each bit is free from ambiguity in terms of individual experience. This brings us back to reliance on norms in measuring individual degrees of text comprehension.

Reading comprehension, whatever one understands by the term, is therefore not testable in the same way that the mechanical skills of reading are testable. There may be a special kind of competence involved in comprehension, but there is no conceivable kind of performance we can ask of a student that will demonstrate this kind of competence, other than the kinds of tests used to separately measure language proficiency, cognitive development, and the study skills. From our point of view, there is nothing to be gained by regarding comprehension itself as anything different from passive language proficiency -- in other words, the same thing as understanding of spoken language (U). Our original formulation:

W - Rp = distance between a written text and the pupil's version of it (channel distance) can now be rewritten (if Rp = Up + Lp) as follows:

W - Up - Lp = the reading comprehension gap

just as the formulation

S - Up = the listening comprehension gap

(or channel distance between a spoken text and the hearer's version of it).

7.5. Literacy distance

At the very end of Chapter 4, brief mention was made of another kind of distance, characteristic of language types themselves, called *literacy distance*. This is the distance between the texts coming through the oral channels of the school and comparable texts written in the same language medium, usually in the standard written language. There are at least three factors that contribute to literacy distance:

(a) The mechanics of the written language concerned, which contributes to orthographic distance;

(b) The time-period, archaic to modern, of the written language, which contributes to historical distance;

(c) The dialect or particular variety of the spoken language concerned, which contributes to comparactive distance.

The historical and comparative aspects of literacy distance (b) and (c) can be handled in the same way that was suggested for the classification of language types -- i.e. in terms of language variety distance (4.3.). Consider the case of a student who speaks a Chinese 'dialect' (e.g. Cantonese) but must read textbooks in Modern Standard Mandarin, and the case of a modern Arabic-speaking student who must read texts in Classical Arabic. In both cases, the literacy distances can be expected to be greater than for these students' counterparts in modern Beijing and ancient Medina, because the distances are affected by more than simply the mechanical aspects of the Modern Mandarin and Classical Arabic writing systems. But the other components of these distances are already covered by the concept of language variety distance, and since the *students' own* versions of Standard Mandarin and Classical Arabic are all we need to measure in order to determine understanding competence (U) in the corresponding spoken versions of these languages, we can safely ignore the question of how close these spoken versions are to the students' 'mother tongues'.

But the existence of *potential* comparative or historical elements in literacy distance can still be indicated, whenever relevant, by the use of an asterisk before the language type designation. For example, if the Arabic student (a) understands Classical Arabic rather poorly, whether he reads it or hears it, we can symbolize the relatively great language variety distance by *A instead of just A, as in the following formula:

$$^{*}\mathrm{AW} \quad - \quad {}^{*}\mathrm{ARa} \quad = \quad 4 - 1 = 3$$

Similarly, if the Cantonese-speaking student (c) understands Mandarin rather poorly (but better than the Arabic student understands the language of the Koran) , his distance formula might read as follows:

$$^{*}\mathrm{MW} \quad - \quad {}^{*}\mathrm{MRc} \quad = \quad 4 - 2 = 2.$$

Orthographic distance, already mentioned in connection with the English, Chinese, Japanese, and Malay examples of Section 7.3., can then be measured in terms of the relative difficulty of various kinds of orthographic systems -- i.e. in terms of their *mechanics*. The major types of orthographies in use in the world today can be classified as follows:

(1) Alphabetic systems with reasonably good sound-symbol correspondence. Examples: Italian, Turkish, Spanish

(2) Syllabary systems, with more or less one discrete symbol for each phonetic syllable that actually occurs in the spoken language. Example: Modern Korean

(3) Alphabetic and syllabary systems with relatively poor sound-symbol correspondence (e.g. with retained archaisms, spellings borrowed from other languages, variant characters or sound values). Examples: English, French, Modern Arabic

(4) Combinations of syllabaries or alphabets with logographic systems. Example: Japanese

(5) Relatively pure logographic or pictographic systems, with a separate character for each lexical item or syllable. Example: Chinese

The effect of orthographic distance, represented by the complexity of the mechanics of the language concerned, has to be handled in a different way, because it is a constant factor in channel distances involving any particular writing system. It is a variable independent of the individual student's understanding competence (U) and hence of his reading comprehension potential. Orthographic distance can be built into our formulas of reading (and subsequently of writing) by assigning a fixed value to each orthographic type -- for example, a value of 1 for alphabetic systems with good sound-symbol correspondence, up to a value of 5 for logographic systems -- and adding this value to whatever theoretical value we assign to the written text (e.g. W = 4).

If we use 'M' (mechanics) as the symbol to represent all such orthographic distance values, then 'XM' will have a value of anywhere from 1 to 5. If XW is arbitrarily equal to 4, then:

$$XW \quad + \quad XM \quad = \text{anywhere from 5 to 9}$$

On the minus side of the final formula for reading distance, we must then assign a value for the student's competence in handling the mechanics of the orthographic system concerned, or his literacy (L). For this value, w can use the same scale, 1 to 5, but with the proviso that the value of L can never exceed the value of M for the orthographic type involved. Thus the maximum value of L for a language written with an efficient syllabary system would be 2, and so on.

The basic reading distance formula, with *s* representing a given student and X a given language type, is as follows:

$$W - Rs = W - Us - Ls$$

With the addition of the orthographic distance value (M), this becomes:

$$XW + XM - XUs - XLs = \text{reading distance for Language X}$$

This formula can be read, 'The difficulty value of the written text (arbitrarily set at 4) plus the degree of orthographic complexity (1 to 5) minus the student's understanding competence (0 to 4) and literacy competence (1 to 5) in the language type concerned is the reading distance'.

To give a better quantitative illustration of the reading formula, in the form of an actual equation, we now rewrite the examples for the Arabic (a) and Cantonese (c) speaking students used previously. Assuming that for Classical Arabic M = 3 and for Modern Standard Mandarin M = 5, and assigning values of U = 1, L = 1 to the Arabic student and U = 2, L = 2 to the Chinese student, the following equations would result:

$$^{*}AW + AM - {}^{*}AUa - ALa = 4 + 3 - 1 - 1 = 5$$

$$^{*}MW + MM - {}^{*}MUc - MLc = 4 + 5 - 2 - 2 = 5$$

Such equations, so far, suggest that the reading distance will be about the same for both students, despite the fact that the hypothetical Chinese student has better competence in both understanding and literacy than the imaginary Arabic student. The crucial factor is alleged to be the greater complexity of the Chinese writing system.

Since the difficulty of the orthographic system and the reader's literacy in terms of that system are constants in any reading act at any given time, and since the same constants are present in any writing act as well, we can state the *basic literacy formula* as follows:

$$XM - XLp = \text{literacy distance.}$$

7.6. Types of reading materials

As previously noted (1.3.), the written channels convey a great variety of material to be read by students in schools which is not in the form of a printed text. The handwriting of teachers and other students, for example, must be read from blackboards and various kinds of paper surfaces, and written texts are projected or otherwise displayed at a rate not controlled by the student. In this section, however, we will be looking mainly at four categories of printed materials, because such materials are probably the most important representatives of texts conveyed through written channels in the typical school. We will be looking at these categories of printed materials with a view to modifying the basic formulas of written channel distance through text analysis (7.7.). The four main categories are as follows:

(1) Printed texts having the main purpose of teaching beginning reading, or 'readers', usually associated with language instruction or curriculum;

(2) Graded readers and supplementary readers not part of any curriculum, language or general;

(3) Printed texts used in connection with general curriculum, or for instruction in non-language

subjects (sometimes including literature and language arts subjects);

(4) All other printed materials available in schools and their libraries.

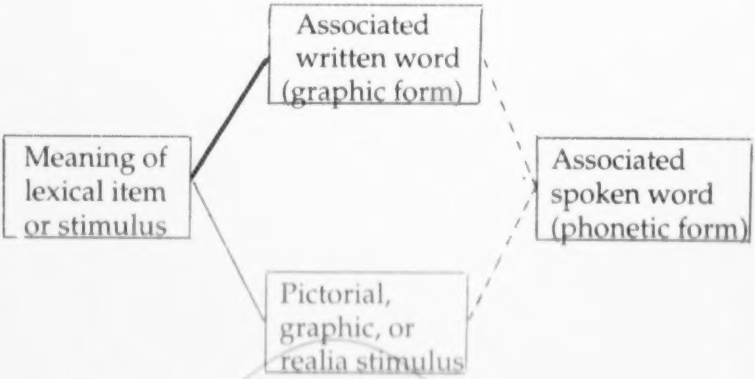
Each of these categories of printed materials, of course, has counterparts in terms of material conveyed through other written channels, but the printed material categories are likely to be the most familiar to the largest number of readers, and also exhibit the least format variation from one type of school to another. They have therefore been chosen to represent the entire spectrum of written media as far as the content and purpose of written texts is concerned.

The first category of printed materials can be further subdivided into four types, on the basis of the implicit or explicit strategies for the teaching and learning of reading skills which they exemplify, as follows:

(a) Basal readers
(b) Language-experience readers
(c) Phonic readers
(d) Linguistic readers

The first two types attempt to bypass literacy distance, and especially orthographic distance (7.5.), by relating the written text as directly as possible to the beginning reader's familiarity with common objects, events, and their characteristics -- i.e. to a presumed common ground of beginning reader experience. These instructional materials are heavily biased toward whole-word recognition, as opposed to the phonic or syllabic analysis of words. For written languages like Chinese, with very great intrinsic graphic complexity ($M = 5$), they sometimes represent the only feasible options in the teaching and learning of reading.

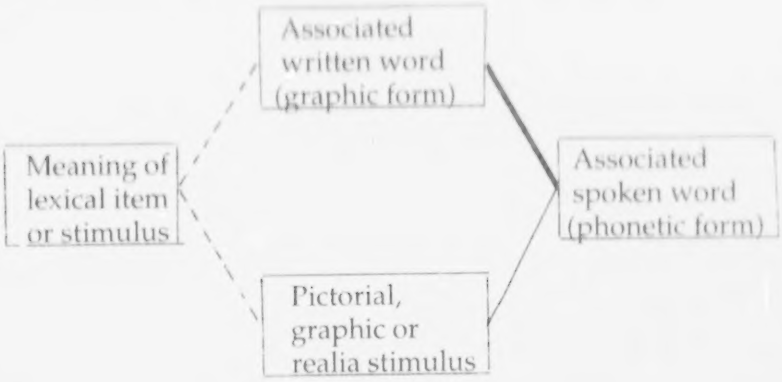
The main difference between basal readers and the language-experience type is that the former rely more on graphic and pictorial representations of objects and situations, and the latter more on realia -- directly observable or tangible manifestations of what the beginner is reading about. Basal readers tend to be more useful, therefore, in programs which are largely self-instructional, but a cultural bias is usually introduced through the use of pictorial and graphic stimuli, which must always be to some extent conventionalized. Language-experience readers, on the other hand, require a much greater degree of teacher attention, but the realia approach minimizes the cultural limitations and often makes the readers more suitable for beginners of diverse linguistic and ethnic backgrounds. Both types of instructional materials emphasize the cognitive and experiential relation indicated by the bonds in this diagram:


Associated written word (graphic form)
Meaning of lexical item or stimulus
Associated spoken word (phonetic form)
Pictorial, graphic, or realia stimulus

The longest and most direct association, in both these approaches, is intended to be that between the lexical meaning and the associated written word (corresponding graphic form), with pictures or realia being used as the linking device, and the phonetic form of the associated spoken word not being particularly relevant to the learning process.

The other two types of beginning readers, phonic and linguistic, take a diametrically opposite approach to the teaching and learning of reading skills. The sound-symbol correspondences are fully exploited, through emphasis on either individual sounds or individual syllables and their corresponding graphs. This approach, of course, is most effective when the orthographic complexity of the language concerned is very low (M = 1 or 2); for writing systems like that of English (M = 3), the purely phonic approach has notorious limitations, and the linguistic approach is much more approaches, pictures and realia may also be used, but there is less attention to the meanings of individual words, the main objective being to develop in the reader what we have called literacy competence (L) rather than understanding of the corresponding spoken text (U).

The principal difference between the phonic and linguistic approaches is suggested, in fact, by the terminology itself. Phonic readers emphasize the deciphering of mechanical systems -- the ability to convert symbols into sounds and sounds into symbols (see 7.3.). Linguistic readers go further than that, and attempt to teach or reinforce the beginner's knowledge of morphological, syntactic, and discourse patterns as well, because these patterns in the written language may be considerably at variance with those of the spoken language with which the beginner (usually a child) is familiar. As far as single words are concerned, however, both the phonic and the linguistic approaches emphasize the linguistic relation indicated by the bonds in this diagram:


Associated written word (graphic form)
Meaning of lexical item or stimulus
Associated spoken word (phonetic form)
Pictorial, graphic or realia stimulus

Here, the linking device may still be pictures or realia, but the direct association aimed at is that between the written text (W) and the corresponding or paraphrased version of the spoken text (S), with meaning being relegated to a minor role. Whether this linking is accomplished through deciphering and enciphering or through decoding and encoding depends to a great extent on the mechanical characteristics of the written language concerned. But the essential difference is that phonic and linguistic readers depend on phonological reinforcement as their principal learning strategy, while basal and language-experience readers depend on semantic reinforcement.

This analysis helps to explain the continuing debate which rages over the best way to teach beginning reading in languages like English. The orthographic system of English (M = 3) is neither extremely simple, like that of Malay (M = 1), nor extremely complex, like that of Chinese (M = 5). Unfortunately, there are some reading experts who believe that reading English is like reading Malay, and others who believe that reading English is like reading Chinese; both groups are willing to die to defend their positions. The possibility that beginning readers may respond differently to different teaching/learning strategies and combinations of strategies, regardless of the mechanical characteristics of a particular writing system, seems to rule out any satisfactory conclusion to this sort of debate.

Unfamiliarity with standard spoken English, as in the case of the foreign student or the ghetto child, may sometimes extend the reading distance beyond the point where the phonic or linguistic approach is operable. On the other hand, basal and language-experience readers may fail because the beginners already possess a high degree of proficiency in the spoken language that corresponds to the written language (U = 3 or 4) and want to get on to the business of reading for pleasure and profit as soon as possible, instead of learning words one at a time. For still other beginners, Dick, Jane,and Spot may be the theoretically correct approach, but if the activities of Dick, Jane, and Spot are essentially boring, there is no guarantee that the linguistic decoding of these activities will not be, and so forth. Neat answers to the questions raised in debates about the best way to teach reading in English, or any other language for that matter, are therefore seldom to be found even through careful research.

In any case, if the teaching and/or learning of basic reading competence succeeds, and if the beginning reader has sufficient motivation and opportunity, he soon graduates to independent reading. Our second main category of printed materials consists of graded or supplementary readers not part of any curriculum. These are printed materials designed not only to enable the student to improve his reading competence through self-instruction, but also to develop a habit of reading for pleasure, through being allowed to choose his own reading materials. (There is no quicker way to discourage this habit than to prescribe dull general readers as part of curriculum and then test students on their understanding of the content.) To some extent, this second category overlaps with the first, because even beginning readers must have *some* kind of content (and the particular vocabulary relevant to it), even if they are based on phonic or linguistic principles, and they must contain grammatical structures even if these are not emphasized in the beginning reading approach.

The classification of graded and supplementary readers given below would therefore apply, in part, to most beginning readers as well, but the classification is designed to emphasize the types of reading skills that are most likely to be further developed by independent readers. The sub-categories are as follows:

(e) Vocabulary-oriented readers
(f) Structure-oriented readers
(g) Narrative (fictional and non-fictional)
(h) Descriptive or expository texts

The first two types (e and f) are usually intended for the reader whose basic language proficiency is generally weak (e.g. students of a foreign language), and the aim is to allow the student simultaneously to improve his understanding competence (U) and his literacy (L) through self-instruction, but with a free choice of whatever book or booklet appeals to him. The difference between the two types is almost self-evident from the terminology. Vocabulary-oriented readers use single words in isolation, short phrases and very short sentences, with lots of illustrations, and thus resemble basal readers to some extent. Structure-oriented readers contain longer sentences and paragraphs. They often ring changes on syntactic patterns within a very limited vocabulary range ('The Three Little Pigs') or simply repeat the same syntactic pattern over and over again ('This is the House that Jack Built'), as a means of reinforcing the student's control over these patterns. Thus structure-oriented readers often resemble linguistic readers in that respect.

The other two types of graded and supplementary readers (g and h) emphasize the aim of developing the habit of reading for pleasure more than the self-instructional aim. Such readers are usually, in fact, graded in some way with respect to both vocabulary and structural difficulty but the purpose of the grading is not to reinforce the control of old items but to facilitate the guessing of (relatively infrequent) new items. Experiments have shown, for example, that if at least 75% of the running words in a narrative or descriptive reader come from the 200 most common words occurring in English books for children generally (the so-called 'Dolch List'), and if the student possesses sight-recognition of the 200 words, even a student who is a non-native English speaker can easily guess the meaning of the remaining words from appropriate illustrations or from context. Similar findings have been made with regard to frequently-occurring syntactic and discourse structures.

For the student who is well on his way to becoming an independent reader, narrative and descriptive readers have a great deal more direct appeal than the vocabulary and structure types, as is often demonstrated when a free choice among all four types of readers is given to young children. Although the stories and treatments of interesting non-narrative themes do not 'teach' reading skills, in the sense of fostering measurable gains in the various components of reading, they do much more to fostering the reading habit. In terms of incidental linguistic development, of course, narrative readers promote comprehension of discourse styles quite different, in most languages, from those occurring in descriptive and expository styles, and these differences show up, in some languages, in syntax as well (e.g. tense systems).

Apart from their being graded as to difficulty and freely selected rather than assigned, narrative and descriptive readers often exhibit the same characteristics as do the last two main categories of printed materials available in the school: non-language textbooks and library books. Reading texts used in connection with general curriculum include examples of narrative writing (history, biography, religious studies -- also

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fiction and drama, wherever literature is not included in the language curriculum) as well as expository and didactic writing. Such texts can, in fact, be classified in the same way as subject areas themselves (see 5.4.), as follows:

(i) Science and mathematics texts

(j) Social studies texts

(k) Literary, religious, and other culture-oriented texts

(l) Texts used in the remaining general curriculum areas

In terms of linguistic difficulty, the general subject texts may be graded or not; they may be available in single or multiple versions for the same academic level; they may be full of graphic and pictorial stimuli or consist of solid printed columns. What makes this category of printed materials different from all the others is that general subject texts are usually designed to foster neither reading skills as such nor the love of reading for its own sake. On the other hand, inability to read such texts usually means a failure of education, either for the individual student or for the school.

The last category of printed materials includes texts found in schools and their libraries which are not directly associated with either language or general curriculum. These materials are the most likely to be ungraded as to linguistic difficulty. To the extent that non-curricular texts are available in a wide variety, and to the extent that students have the time and opportunity to avail themselves of the selection offered, this last category can do more to improve the motivation for reading, and also incidentally the reading skills, than any other category of school printed materials, provided only that there are students capable of reading independently in the language of the texts. Good school libraries, in short, can help to support both language and general curriculum, but only if the library stocks are in the appropriate language media.

7.7. Text Analysis

In our previous discussion of comprehension (7.4.), three independently variable factors in the measurement of comprehension were identified: (1) language proficiency; (2) cognitive development, imagination, and creativity; (3) individual experience of the reader or hearer. It was also observed that comprehension of oral and written texts is always relative, and it was asserted that objective measurement of comprehension is impossible. This seems to contradict the validity of assessments such as 'Pupil was tested and found to be able to read English at Grade 5 level', which are made by reading specialists in the United States and elsewhere. Yet in the section just concluded, we have talked about 'graded readers'.

What is the explanation for this apparent contradiction? How can reading material then be 'graded', if reading comprehension itself embraces so many variables and cannot be measured accurately? If the reading materials cannot be classified in terms of difficulty of comprehension, how can we then presume to classify students according to their 'reading levels'? The answer to the question on the relative comprehensibility of texts is attempted in this section, and the answer to the question on the relative reading proficiency levels of students is attempted in the last section of this chapter (7.8.). The approach taken with regard to both questions makes use of the basic formula of reading distance (7.5.):

$$XW + XM - XUp - XLp$$

After literacy distance (XM - XLp) has been extracted from this formula, reading comprehension is effectively equated with listening comprehension:

$$XS - XUp = \text{constant of all passive channel distances}$$

This approach is very different from the one taken by most people who grade readers (i.e. those who classify both reading materials and reading competence or performance), but the essential strategy is a parallel one and the results of the grading are very similar. The difference here is that the kind of literacy distance which places an additional burden on the reader, as opposed to the hearer of a text in the same language type, is separated from the degree of comprehension. Any extra difficulty caused by the mechanics of the language type concerned (XM) has already been isolated by the formula, and the scaling of text difficulty in any language becomes comparable to scaling in any other.

Let us first consider the problem of the readability of written texts. Cognitive development, imagination, creativity, and individual experience are not easily measured without reference to language competence or performance. How then can we define and assess the *linguistic* readability of a given text in a meaningful way? If we accept that comprehension is relative, and never absolute, there is a way. This way has already been suggested by our definition of language proficiency (5.8.), which used the 'educated native speaker' as a criterion. All we have to do is identify people whose standard of comprehension of written texts in various subject areas we regard as satisfactory (not perfect), and then measure the degree of difficulty these *people* experience in comprehending various kinds of texts.

In assessing the readability of scientific texts at various levels, for example, we need to locate people whose proficiency in the language of the text, cognitive development, and individual experience (in this case, knowledge of a particular scientific field and its preferred discourse styles) are all beyond question. The degree of imagination and creativity of these satisfactory readers is a factor we can disregard for the moment (but see section 8.8. for how this factor is handled eventually). Our 'standard' group of readers will admittedly represent certain arbitrary criteria of selection, no matter how they are selected, but this is better than a pretense of objectivity where no grounds for objectivity exist. In the school context, moreover, exactly the same kind of arbitrariness of selection will be exhibited by general curriculum teachers -- in this case, teachers of science -- whose language proficiency we do not have to take for granted but whose competence in the general subject they teach we do have to take for granted.

The tests of readability which we devise and administer to this standard group of readers must be difficult enough so that nobody, even in this group, can score 100% on them. If a perfect score is possible, then comprehension is no longer relative. The easiest way to ensure that no text will be seen as absolutely comprehensible is to use some kind of *cloze testing* procedure. Since the first experiments with close testing as means of assessing text difficulty, using native speakers as subjects, this technique has been further developed by other researchers to the point where it is a fairly reliable instrument, and one which achieves more or less the same results as other, far more complicated measurement techniques.

The procedure begins with the selection of sample scientific texts, with an effort to cover the entire range of linguistic difficulty as predicted by other means (e.g. academic levels where the texts are used, scores on standard 'reading comprehension' tests, relative speeds at which the texts are read by students, etc.) From these texts sample passages are then selected for cloze treatment (deleting every fifth, sixth, or seventh word, etc.), and the resulting cloze tests are administered to the standard group of science readers and scored. (If any reader scores 100% on a given cloze test the passage must be extended or eliminated from the sample.) Using the cloze-score means of the standard group of readers, we can then establish preliminary levels of linguistic difficulty for scientific texts.

The next step is to carry out exactly the same procedure for all the other subject areas of general curriculum and those extracurricular subject areas which are likely to be relevant to the school system. For each subject area, a group of standard readers is selected, sample texts representing the entire range of suspected difficulty are chosen, the cloze tests are devised, administered, and scored. In order to cover the extremes of the difficulty scale (which might not be represented in any general subject text), it is also advisable to follow the same procedure with regard to library books and periodicals of a highly sophisticated nature, at one extreme, and to primary school supplementary readers at the other (but *not* to readers designed to teach language or reading itself).

After we have compared the preliminary levels of dificulty suggested by cloze means in each of the subject areas and general areas to which we have applied the procedure, suppose we decide that there are only five levels of linguistic difficulty shared by all texts written in Language X: viz. very easy, easy, average, hard, and very hard. The next question to answer is as follows: what exactly makes any sort of text *linguistically* easy or *difficult*? The only way to answer this question is to perform some kind of text analysis based on linguistic principles. Analysis of both written and oral texts can of course be based on the same principles. If our literacy distance formula is adequate, it should make no difference whether a given text is read or listened to (and oral cloze testing can be used to confirm this). The only variables we would expect to find relevant are message rate, recoverability, and channel noise, since the reader or listener is not required to react in the normal way to the message, and these variables are rather easily controlled in the test situation.

We will first discuss the analysis of written texts, however, since this is more easily done, and more commonly practiced, than the analysis of spoken texts. There are essentially only two methods strategies which can be employed in applying linguistic principles to text analysis. These correspond to the dichotomy of form and function in language (5.5.). The formal, or discrete-points method of analyzing a text looks at the lexical, syntactic, and discourse surface features of the text separately, and attempts to establish such statistics as the following:

Lexis	Syntax	Discourse
Frequency of basic vocabulary, technical terms, and non-basic non-technical items	Average length of basic syntactic units	Average sentence length Paraphrasing and sub-headings
Ratio of simple words to derived and compound words, etc.	Frequency of embedding, relativization, subordination, nominalization, and the like	Frequency of discourse markers, repetitions, pronoun replacement, synonyms, superordinate terms, etc.

The principal advantage of the discrete-point method of text analysis is that it yields firm and comparable statistics, which make possible the cross-comparison of texts written in very different styles and registers. On the other hand, synthesis of the results is not always easy. For example, if a text known to be difficult exhibits unusual frequencies and ratios in all categories, is it particular lexical, syntactic, and discourse categories that make the text difficult, or is it a combination of all of them? In addition, when analysis based on surface forms is applied to texts which are not expository texts or straightforward narratives, there is no machinery to handle the pragmatic aspects of the content, such as persuasion, irony, or deprecation.

The second strategy employed in text analysis is an integrative one, in the sense that it attempts to establish the underlying notional and functional basis of the text and its communicative intent, as a means of assessing its difficulty for the reader. Surface features such as lexis, syntax, and discourse devices are seen as reflections of semantic and pragmatic components of the text, but these components themselves are viewed as the real sources of its complexity or simplicity, and not the overt manifestations which directly confront the reader. This approach is especially effective in the analysis of discourse, and it is also capable of being applied in texts on religion, fine arts, cultural subjects, and all kinds of literature in other subjects which is not handled well by the discrete-point type of analysis. The principal disadvantage of the intergrative, functional type of text analysis is that it tends to be subjective: different analysts tend to disagree as to the categories of notional or communicative intent embodied in a given portion of text, and hence the reliability of a particular exercise in text analysis is always in question.

Whatever approach to text analysis is followed, however, the results will be useful in predicting what might be called the *comprehensibility index* of a given text -- that is, in predicting its relative difficulty for the fully competent reader or hearer with the relevant experience in the content area concerned, without actually testing it out on such readers and hearers. This comprehensibility index, in the case of written texts, becomes equivalent to a *readability index*, because for a fully competent reader of Language X the litracy distance is zero (XM-XLn=O). The discrete-point, formal type of text analysis can establish comprehensibility only in terms of language proficiency, but the integrative, functional approach also takes communicative competence into account. Both methods can be applied to establish indices for either spoken or written texts, and the predictions of comprehensibility or readability implied by the indices can be verified in both cases through administration of cloze tests to competent hearers and readers.

When we come to the analysis of oral texts, however, text analysis is a somewhat more complex undertaking. Recordings of reasonable fidelity of spoken language can of course be made, and then analyzed at leisure, just as written texts can be. Or paper transcriptions of speech events can be made in which the distinctive features of oral communcation are represented with far greater fidelity than can be provided by any standard orthography; such transcriptions will in fact be superior to written texts in that respect. But this is not the basic problem. Complications arise in oral text analysis because oral performance of any kind (except for formal speeches, lectures, reading aloud, and other such one-speaker performances) provides much greater opportunity than typical writing performance does for immediate feedback, exchanges of dialogue, and even simultaneous use of the same channel by more than one speaker. In other words, communication through the oral channels tends to take place in real-time interaction, rather than being strictly sequential, reacted to after delay, or not reacted to at all, like written communication. The oral language of the chemisty laboratory, for example, may differ more from the oral language of the chemistry lecture than the latter does from the written language of the chemistry textbook.

In text analysis of oral interaction, the same principles apply and the same methods can be used to establish indices of comprehensibility as can be used to establish indices of readability. The degree to which fully competent listeners with the relevant individual experience can understand given conversation, multiple-speaker communication event, or oral presentation concerning chemistry can be measured in the same way as the degree to which a fully competent reader can understand a written text about chemistry. But unless the oral interaction or presentation is recorded on videotape, filmed, or transcribed in such a way as to give full attention to kinesic, proxemic, and paralinguistic features as well as linguistic features of the text, even the integrative/functional approach to text analysis becomes difficult. The contributions of pragmatic, stylistic, and discourse features to text difficulty may be quite unrecoverable in an exchange between two or more oral performers.

Indices of comprehensibility, whether predicted from text analysis or established through actual tests with competent, experienced hearers and readers, can be converted into values that are added or subtracted in any equation of passive channel distance. Suppose, for example, that we have succeeded in establishing five general levels of linguistic difficulty for mathematics texts written in Language X, and suppose further that these levels roughly correspond to the kind of language normally found in primary school arithmetic textbooks, primary and secondary school algebra, geometry, and trigonometry textbooks, university-level calculus and engineering textbooks, and professional journal articles on higher mathematics respectively. (It is not likely that the correspondence between linguistic and content difficulty would ever be that neat, but this is only a hypothetical example.) We could then assign a value of 1 to 5 to the comprehensibility index (CI) for any text concerning mathematics in Language X (XTm), and add this to the arbitrary value of 4 set for what comes through the channels to the consumer in general (XS or XW), using the equation:

$$XTm = XSm + CI \text{ or } XTm = XWm + CI.$$

Thus, a lecture on topology with a comprehensibility index of 4 would be formulated as follows:

$$XTm = XSm + CI = 4 + 4 = 8$$

and a passage in a secondary school algebra textbook (CI = 2) as follows:

$$XTm = XWm + CI = 4 + 2 = 6$$

In any formula of channel distance, therefore, XT can now replace XWt or XSt, in which *t* stands for the teacher, instructional text, or any other language producer, because once the comprehensibility index of the text is known and has been included in the formula, *it no longer matters who or what produced the text*. Thus the mathematics pupil (p) must bridge the following linguistic distance in interpreting the content of the algebra passage exemplified in the last formula above (XTm = 6):

$$XTm + XM - XWp - XLp = \text{written channel distance for pupil } p.$$

The value of the channel distance represented by this equation is now established independently of the pupil's cognitive development and individual experience with mathematics, and thus still represents a linguistic distance. The question of the pupil's imagination and creativity, and the place of these factors in the equation, will be dealt with after the active language skills have been discussed in the next chapter.

7.8. **Reading and listening levels**

To summarize the preceding section, if there are sufficient samples of texts used in schools or school systems, representing both the oral and written channel of the relevant media of instruction, and if there are enough competent readers and hearers in the corresponding subject areas who are willing to take cloze tests based on these texts, we can make a preliminary grading of the texts into as many levels of difficulty as we want. The next step is to separate the linguistic difficulty of the texts from problems of misreading or misunderstanding caused by incomplete cognitive development or lack of imagination, creativity, or individual experience. This is accomplished through text analysis, which is essentially linguistic analysis performed on either a formal or a functional basis. If the degree of difficulty of a given text for a competent reader or hearer can be predicted solely from its linguistic structure, this becomes evidence that other factors are irrelevant in establishing an index of comprehensbility for that text. A graded series of such indices of comprehensibility can then be applied to any sort of text, provided only it is in the same language medium, through further text analysis. In other words, the index of comprehensibility of an oral text, or the index of readability of a written text can be regarded as a constant no matter what the subject matter of the text happens to be.

To illustrate how this procedure works, let us get away from the all-too-similar English context. Suppose we designate, for example, the staff of the unit in charge of secondary school science in Malaysia as being a group of people with sufficient fluency in the Malay language, cognitive development, and personal experience (knowledge of the scientific fields concerned) to be able to comprehend, to a satisfactory degree, any new piece of scientific text written for the secondary level. We then select, say, 30 long Malay passages from science curriculum materials of various kinds, make cloze tests out of them, and administer these tests to the staff. The mean scores achieved on the cloze tests by the 'standard' group are then used to grade these texts -- let us say, into five preliminary levels of assumed difficulty: very easy, easy, average, hard, and very hard. We can then use text analysis to determine what linguistic aspects of the sample texts at each level might contribute to the relative simplicity or complexity of the Malay language in them. Finally, we can check our findings in the science subject area with similar findings from all the other subject areas -- e.g. history, geography, literature, and Islamic Studies.

We will eventually arrive at a graded series of readability indices which are specific for Malay (and no other language). These indices might not be the same as the ones we started out with, using science staff and science topics only, and if enough different subject areas have been sampled, the indices will be relatively free of cognitive or experiential bias (though not entirely of cultural bias, because of the interlocking nature of language and culture). If we have assumed correctly that all the standard groups who took our cloze tests had sufficient fluency in Malay, moreover, we will have controlled the linguistic competence factor in reading comprehension as well -- that is, any difficulty in interpreting a text must have been caused by the text itself, not by some failure on the part of the reader due to an understanding gap (XT-XU).

The collective or aggregate results of text analysis performed on texts in all subjects at each index-of-readability level will tell us what linguistic characteristics (+ pragmatic or communicative characteristics, if we have used integrative analysis) define each level of readability. The indices of readability and the linguistic characteristics associated with them can then be confirmed through prediction: New texts in various subject areas at various (estimated) readability levels are subjected to text analysis, and new cloze tests are designed from the same texts and administered to the corresponding groups of standard readers, and the results are correlated. If the predictability of the index of readability from text analysis and vice versa is not very high, further adjustments have to be made, and so on.

No matter how reliable our indices of readability turn out to be, however, there is another step involved in testing *students'* levels of reading (and listening) comprehension. Obviously, we cannot use the same cloze tests which we have developed to give to specialists in science, geography, history, Malay literature, Islamic Studies, and so on, because such a procedure would only lead us straight back to testing knowledge of subjects, not reading comprehension itself. And while we might wish to concentrate entirely on linguistic competence in testing students' levels of reading comprehension, we cannot completely rule out other kinds of individual experience, cognitive development, socialization and communicative competence as factors in the performance of students in any kind of reading task. Cognitive development, for example, is closely related to control of language structure; both cognitive development and personal experience affect the acquisition of new vocabulary and new styles of discourse and so on.

We can, however, control these other factors to some extent. The best way to control them is to use a cloze testing procedure as before, but select texts this time which are as general as possible, instead of selecting texts from specific subject areas like science, social studies, and the fine arts. Even real literary texts, written originally in Malay, put a heavy burden on personal experience and acculturation, because they are based on sub-cultures with which not all children are equally familiar. On the other hand, texts written expressly to promote literacy, such as phonic and linguistic readers, or vocabulary and structure-oriented ones (7.6.), put too much specific emphasis on phonological, lexical, and syntactic patterns, and are thus not very typical of written texts in general.

What is left, then? The best texts for cloze-testing in order to establish student reading levels at the lower end of the scale (very easy, easy, and average indices of readability) are undoubtedly children's books which are known to appeal to a wide variety of pupils of different age-groups. Whether those books are commercially produced or developed by curriculum centers as part of a supplementary reading program for schools, their popularity must be attested either through sales figures or experimental research before they can be chosen to form the basis for cloze testing of pupils. The narrative, descriptive, and expository readers described previously (7.6.) are obvious possibilities.

Selecting passages from such books, making them into cloze tests, and administering the tests to educated adult Malay readers will classify the passages according to indices of readability, which should also be confirmed by text analysis. For testing the higher levels of readability, suitable general books may not exist. In that case, passages will have to be written expressly for the purpose -- for example, by curriculum developers already familiar with the readability indices found in subject textbooks at the secondary and higher education levels. But the *vocabulary* in the specially written passages has to be kept as free as possible of the technical terminology of any subject. Again, these higher level passages have to be tried out on educated adult readers to confirm the indices of readability.

Once the cloze tests at all levels have been developed, they are ready to be administered to large numbers of schoolchildren of different ages in order to establish *reading levels*. It is important to note here that these reading levels are not, strictly speaking, levels of reading comprehension, because reading comprehension, as we have seen, involves many other factors. They are essentially measures of passive channel distance -- that is, once literacy has been factored out, they are measures of performance with regard to a text of a given *comprehensibility index*.

It is also important to note that reading levels cannot be based directly on *mean test scores* of students -- say, the scores on particular passages for a particular year -- but must always be criterion-referenced. For example, 60% or better cloze scores on a series of passages all at readability index 3 ('average') by an individual student can be taken as evidence that the student 'can read at level 3', but this judgment has to do with the comparison of his performance in relation to the performance of educated adults and not to that of his peers. The reason for not basing reading levels on the mean scores of students is that the methods and materials for teaching reading skills may be expected to change from year to year, with better or worse school-wide results. The oral competence of students in Malay, both on entrance to school and after several years of schooling, may also be expected to vary from year to year. Since both of these are factors in reading performance, an independent criterion is needed in determining reading levels of individual students. The measurement of reading levels therefore is based not only on the indices of readability themselves but also on the performance of adults whom we are ready to certify as good readers.

There is another, more practical reason for not using students' mean test scores to define reading levels. Obviously, the same cloze passages cannot be used over and over again for testing; new ones have to be developed for each year, or else some teachers will 'teach' the passages as a means of driving up reading levels for their classes, regardless of the announced purpose of the reading tests. In order to ensure that the new passages are of comparable difficulty, they will have to be tried out with educated adult readers as before, but their selection or construction can be based on text analysis and the appropriate linguistic characteristics associated with the level to be tested.

The reading levels ultimately established by such a procedure for a language like Malay might very well resemble the 'grade levels' of reading comprehension arrived at in other countries by totally different methods. But the advantages of following the procedures outlined here are two fold: (a) Listening levels can be established simultaneously with reading levels, through parallel cloze tests and the application of the literacy formula; (b) many other applications of the comprehensibility indices, for both oral and written texts, can be developed in association with cloze testing and text analysis.

In the grading of text materials and the sequencing of language instruction materials, there are in fact four different applications of any index of readability or comprehensibility:

(1) The grading of readers and listening materials for individual selection by students;

(2) The development and/or grading of general curriculum materials;

(3) The development and sequencing of language instruction materials;

(4) The establishment of reading or listening levels of individual students or groups of students, in connection with either language or general curriculum.

With regard to the first application, it is often desirable for schools to provide reading materials, tapes, or records for students to use in the school or to borrow which have no direct connection with either language or general curriculum, but which will allow students to pursue their own interests. Whether or not these materials are kept in a central place, such as a library, it is sometimes desirable also to grade them -- so that, for example, students do not become discouraged by texts too difficult for them to comprehend or become bored with texts that are too easy. In this kind of grading, indices of readability or comprehensibility are merely a shortcut.

The same (or possibly a better) classification of relative difficulty can be obtained by trying out the materials to be made available for selective reading or listening, using a representative sample of the student population which is the intended audience. In any case, there are considerations other than linguistic ones in the selection and grading of such materials -- e.g. popularity, visual attractiveness, appropriateness, cost, ease of replacement, and so on.

It is mainly in the school situation where supplementary materials are to be made available for the indirect support of language learning, through increasing motivation or opportunity for acquiring a language which will later be used as a medium of instruction or reference language, that the grading of texts becomes very practical. In such cases, and especially when indices of readability are already available and do not have to be worked out by curriculum developers or language specialists, the application of indices becomes relevant. But this appplication already begins to merge with both the second and third applications listed above.

The second application, involving the development and/or grading of general curriculum materials, arises more often in connection with language types which do not have ready-made literatures, and in which commercial publishing volume is small. The example given earlier in this section, science curriculum development for Malaysian secondary schools, is pertinent here. For international languages like English, the developers of general curriculum have not only a wide range of tried and tested materials to choose from, among those already developed by educational or commercial organizations, but such texts often do not even have to be graded for linguistic difficulty, since the developers and publishers may already have had this in mind. For languages less widely used as media of general instruction, such as Malay, however, texts often have to be newly developed for certain specific levels of schools systems.

Since it is an expensive proposition for a national, provincial, or local government to develop even one version of a sequence of texts for a given subject area, e.g. general science, in a new language medium, it is wise to consider in advance the linguistic difficulty as well as the difficulty of subject matter of any projected sequence of text materials. Here, established indices of readability and comprehensibility for the language concerned are an obvious need, not only for grading and sequencing the text materials in linguistic terms, but also deciding such questions as whether it is better to translate international curriculum material into the new language medium or to insist on original writing of texts and subject expertise. If, for example, it turns out that Malay science texts translated from English by teachers and curriculum developed with the necessary language competence are in general less readable than those written originally in Malay, this information is of great importance to curriculum developers and textbook publishers in the science field. Otherwise, the new curriculum materials may have to be pre-tested with students of every language proficiency range at every grade level concerned. If this is not done, failure of the developmental sequence could just as easily be due to students' linguistic deficiencies as to faults in the content design and sequencing.

The application of indices of readability and comprehensibility to the development and sequencing of language instruction materials and language curriculum is fairly straightforward and obvious. Once the linguistic demands of general curriculum are known, in terms of reading and listening tasks which students must perform at various academic levels, it becomes the responsibilityof those in charge of language instruction to see that as many students as possible are attaining the required reading and listening levels in the relevant language media ahead of time, or at least by the time these levels become crucial (see also Chapter 11). One of the simplest ways of doing this, of course, is to make sure that language instruction includes reading and listening to texts of about the some level of difficulty as the general curriculum texts at the next higher level, but with as much technical terminology and discipline-specific vocabulary as possible excluded. The same indices of readability and comprehensibility that are used to grade and sequence new general curriculum materials can alternatively be used to grade and sequence language instruction materials, or to develop new supplementary reading and listening materials of the vocabulary, structural, narrative, or expository types (see 7.6.)

for individual selection by students, in support of language instruction and curriculum.

The last application of the indices, to the establishment of reading or listening levels and to the testing of individual students against criteria of performance by educated adults, has already been discussed at some length in this section. But there are certain problems inherent here, regardless of the language variety concerned. The main problem is that, although we may know from text analysis what makes a text difficult in a given language and what makes it easy, it is impossible to construct a spoken or written text which has no content, but only linguistic forms and the realization of communicative functions. As soon as we put some kind of content into a text, even if it is the 'universal' content of typical children's readers, we are confronted again with the problem of separating psychological, social, and experiential development from language proficiency.

The best way to bypass this central problem, in measuring reading or listening levels, is to include in language curriculum (as opposed to language instruction) cloze tests based on passages written explicitly to measure reading and understanding in the linguistic sense. This will require, at least, that language teachers endeavor to include the minimum content of such passages in their teaching approaches, and hence that this minimum content has some chance of being equally familiar to all the students that are later tested. The passages so constructed will inevitably resemble supplementary readers with all but the most basic vocabulary removed from them, and they will not be very interesting as a result. So long as they are used only to test, and not to instruct or motivate pupils, they will do the job to some extent.

CHAPTER 8

COMMUNICATIVE COMPETENCE AND WRITING

8.1. Speaking skills
8.2. Pragmatics and speech acts
8.3. Interlanguage and fossilization
8.4. What is writing?
8.5. Communication and creativity
8.6. Audience variables
8.7. Error analysis
8.8. Active/passive distance

The concept of communicative competence, as opposed to mere linguistic or grammatical competence, is not a new one in terms of theories of language behavior and the philosophy of language. Austin, Searle, and others long ago laid the theoretical foundations of speech acts, and several different sociologists of language (e.g. Ferguson, Labov) have pointed out the possibilities for speaking more effectively by choosing different, but after related, codes for different audiences, occasions, and topics. More recently psycholinguists have been preoccupied with the details of individual processing of various speech acts in different codes. It only remained for these theoretical elements to be combined into a single conceptual model which could then be applied to various language teaching and learning situations. This is essentially what modern language program developers mean by communicative competence. The need for its inclusion in language training (or even in language curriculum) arose from the realization that older models of language instruction and curriculum were often emphasizing grammatical correctness and cognitive precision in the expression of straightforward logical propositions, at the expense of underemphasizing the ability to use a given language type in its full range of communicative possibilities.

Although theories concerning communicative competence as such have emerged (and have enjoyed considerable vogue) only recently, first-language program developers have for a very long time had this kind of objective constantly in mind. 'Language Arts' programs in many countries and school systems do, in fact, take linguistic competence more or less for granted and concentrate on the creative and communicative aspects of active language use and on the critical and interpretive aspects of passive language use. It was partly for this reason that our original definition of language curriculum (1.8.) specifically excluded 'Language Arts' courses in which the name of the language type concerned is not even mentioned. In the typically monolingual educational context where this occurs, whatever is taught under the heading of Language Arts or Literature we have considered as more properly belonging to general curriculum than to language curriculum. But there are also borderline cases -- the Hawaii English Project, for example, has developed a curriculum which is essentially of the Language Arts type, but which also caters to the small percentage of non-native English speakers in the school population it is designed to serve.

As the term 'speech acts' suggests, the focus of those who have done research and published on communicative competence as such, as well as of those who advocate its inclusion in language programs, has been mainly on the use of oral language. The notion of competence, moreover, embraces the control of receptive as well as productive skills, so that both speaking and understanding are necessarily involved. We have chosen here, however, to discuss communicative competence under the heading of the active skills of speaking and writing, because it is only in these contexts that communicative *performance* can be demonstrated, and because the parallels between writing and speaking performance (though not emphasized by typical writers on communicative competence) are in our terms very much the same as the parallels between reading and understanding which were discussed in the previous chapter.

8.1. **Speaking skills**

As in the case of the listening skills (7.1.), speaking skills in any language type are closely associated with certain study skills, and also with other not purely linguistic skills such as the ability to choose the appropriate speech act and also the code in which it is to be performed. Another way of putting this, from the point of view of speech generation, is to say that the speaker must know not only how to express the required semantic or notional content in terms of the surface forms of some standard language, but also how to express different pragmatic intents and language functions in different ways, some of these ways often involving non-standard surface forms, depending on the audience. Thus whatever the basic skill of speaking is, it is always something more than the mere encoding of what the speaker wants to say in a single 'correct' version which the language provides. Most of prescriptive grammar, and an unfortunately large portion of descriptive grammar (traditional, structural, or generative) has, however, been concerned with the more limited concepts of speaking and writing.

First, let us review the study skills associated with speaking and try to set those aside. In five of the first six study skill areas of Chapter 6 (6.1.-6.3., 6.5.-6.6.) we have seen how the production of spoken language for presenting or gathering information in a straightforward way can be associated with describing visual displays, relaying information, narrating, describing processes, conducting interviews, summarizing, and synthesizing, but that in all of these areas the cognitive as well as the purely linguistic aspects of speaking are involved. In the seventh area, argument and persuasion (6.7.), speech acts are also relevant, and in connection with the eighth area (6.8.) the skill of paraphrasing within the same language is clearly related to the choice of sociolinguistic codes. Thus in these last two skill areas communicative performance must be added to straight language performance in order for the speaker to succeed in the skill. It is only in the area of the use of reference materials (6.4), that the active use of oral language does not play much of a role.

From another point of view, the linguistic and communicative skills of speaking can be associated with the reciprocal skills of listening. This relation is further explored in the last section of this chapter (8.8.), but it will be well to summarize here the qualitative and quantitative variables of the common message channel shared by speaker and hearer. For this purpose, the variables involved in speaking are the basis of comparison, but the general format is the same as the one used for comparing listening and reading (7.1.).

Oral Channel Variables	Active: Speaking	Passive: Listening
1. Message rate and recoverability	1.1. Non-recorded speech: controlled by speaker, but rate must be within certain limits to be comprehensible	1.1. Non-recorded speech: rate not controlled by listener; non-recoverable message
	1.2. Recorded speech: still controlled by speaker, but may be	1.2. Recorded speech: rate only partially controlled by

	influenced by presence of equipment	listener; recoverable message
2. Channel noise and volume	2.1. Channel interference: influences speaker as well as listener	2.1. Electronic or natural noise makes message difficult to decode
	2.2. Background interference: speaker can counteract by raising volume, etc.	2.2. Wrong volume, rate, pitch, etc. makes message difficult to decode unless speaker compensates
	2.3. Gaps, errors, self-corrections, non-linguistic sounds: speaker cannot avoid entirely (unless rercording)	2.3. Listener with good language proficiency can compensate for speaker - produced 'noise'
3. Message producer variables: what the speaker himself contributes to the encoding of the desired message	3.1. Speaker's linguistic and communicative competence: speaker has option of changing codes	3.1. Not controlled by listener; if speaker changes codes, may become added problem
	3.2. Familiarity with context: always affects message content	3.2. Always affects message interpretation
	3.3. Cognitive skills (esp. organization of message)	3.3. Not controlled by listener
	3.4. Communicative intent (pragmatics of the situation)	3.4. Must also be interpreted by listener
	3.5. Attention, set, motivation, etc. of speaker	3.5. Not controlled by listener

3.6. Familiarity with audience (in recorded speech and broadcasting, audience may be unknown)	3.6. Not controlled by listener; speaker may use wrong code, style, or unfamiliar pronunciation
3.7. Self-monitoring and short-term memory	3.7. Not controlled by listener; affects cohesion, redundancy, and frequency of errors in message

(The fourth set of variables, having to do with the comprehension task, is not relevant here. A parallel set of variables, for the message producer, is given in 8.4).)

From this comparison, we can see fairly clearly that the channel distance (or message loss) represented in our formulation XS - Up can come from a great many different sources having to do with the act of listening itself, rather than from deficiencies in the listener's competence in the language type represented by X alone. But we can also see that assigning a fixed value to XS (the message in Language X as conveyed through the oral channel) without regard for the oral delivery rate, redundancy, noise, volume, and speaker variables, and without taking into account whether the message is live, broadcast, or recorded (recoverable or not), is a very misleading device indeed, useful only for a very generalized version of 'normal' speech in the standard variety of the language type concerned. Even if we exclude from the area of speaking skills the study skills related to them, and even if we separate communicative competence from language proficiency as such, it is obvious that the value of XSt, in which *t* represents a teacher with unquestioned proficiency in Language X giving a well-organized lecture in that medium on the factual aspects of his own best subject, still cannot be a constant. Noise in the corridors, or errors in his own speech which the teacher does not correct, will instantly reduce the assigned value.

8.2. Pragmatics and speech acts

As we have observed (in 5.5.), the traditional skills-based and discrete-point analyses of language proficiency components have tended to neglect pragmatics, which is either a component of semantics (also partially neglected in some grammars) or a separate component of language altogether. We have taken the position that language proficiency does not include communicative competence (5.8.), largely for the reason that communicative performance is very difficult to test or assess in the typical school situation, and therefore that the corresponding competence or proficiency cannot usefully be included in what we have called language curriculum.

This position, however, does not prevent the inclusion of activities designed to promote communicative competence in sequences of language instruction, just as the separation of language proficiency from study skills does not prevent the latter from sometimes being emphasized in language instruction sequences. Pragmatics, very briefly, is the theoretical component of language which speakers and writers call forth when they super impose their communicative intents, either explicitly or implicitly, on the basic message content. Speech acts are the result of such secondary encodings at the surface level, and it is through the analysis of speech acts in various languages that theories of pragmatics have been developed.

Speech acts are very complex phenomena, but perhaps a few examples will serve to convey a general notion of their role in linguistic communication. All known languages have explicit (lexical or syntactic) ways of conveying communicative intents -- e.g. in English , through 'performative verbs'. Some languages have syntactic or lexical patterns corresponding quite closely to the functions of stating, questioning, commanding, and so forth, and many have some overt phonological means (e.g. rhythms, voice qualities, intonation contours) of conveying the speaker's general attitude toward what he is saying at the moment. The essential point about speech acts is, however, that these formal signals of communicative intents and attitudes do not necessarily correspond one-to-one with the pragmatic or functional 'meanings' which the speaker has in mind. Even at the level of formal propositions, moreover, speakers can be sarcastic, patronizing, devious, deliberately vague, or mendacious in encoding the propositions, in contrast to delivering the information in a straightforward, neutral manner. In languages such as English, which have separate syntactic patterns for statements, commands, and questions, the existence of a given syntactic pattern does not necessarily correspond with the speaker's actual intent, for example:

Form	Normal Function	Possible Other Function
It's cold in here.	Statement	Close the door, you idiot!
Close the door!	Command	Don't you mean open it?
Don't you think it's a bit chilly in here?	Question	I think it's very cold in here.

Examples of other, lexical ways of conveying communicative intent in English are numerous, as illustrated by verbs like the following:

accuse
admit
advise
agree
allege
answer
argue
ask
beg
bet
blame
blurt
brag

complain
compromise
concede
conclude
confess
confront
consent
console
convince
criticize
curse
dare
defend

deny
describe
designate
disgress
disagree
dispute
dissuade
divulge
encourage
equate
excuse
expatiate
explain

flatter
forbid
forgive
gossip
greet
guess
hint
illustrate
imply
infer
inform
insist
interpret

interrupt
introduce
invite
jeer
joke
kid
lie
malign
rebut
mean
mention
name
narrate

obey
offend
order
outline
paraphrase
permit
persuade
placate
point out
praise
preach
promise
quarrel

question
quibble
ramble
rave
recant
recommend
repeat
repent
report
request
review
ridicule
scold
shame
slight
suggest
summarize
swear
take leave
taunt
tease
tell
thank
threaten
undertake
urge
verify
vilify
vindicate
vow
waffle
warn
wheedle
whine
wonder
yield

and many others.

Yet the direct speech acts corresponding to the meanings of the above list of verbs do not require the overt use of a single one of these verbs, which are mainly used in description or indirect reporting of what has been said, how or why it has been said, or how it has been interpreted by the hearer. In normal communication, the hearer is left to infer the speaker's intent from the topic of conversation, the situation, the role relations of the speaker to everyone present (including the hearer) or in the presumed audience for the speech event, plus whatever phonological, lexical, and syntactic cues and clues the speaker chooses to provide, plus a knowledge of the speaker's sociocultural background and his expectations of his hearers. That people can actually interpret the meaning of speech acts (though sometimes wrongly, to be sure) is evidenced by the list of more than 100 English reporting verbs given above, which is far from being a complete list.

More importantly, the existence of these verbs indicates not only that hearers can interpret speech acts, but also that they are expected to. Otherwise, speakers would take more pains to make their intentions overt -- for example, by saying always 'I want you not to come any closer' instead of 'Don't come any closer!' or by saying 'I call you a fool' instead of 'You're a fool!' Making the meaning of speech acts explicit is a device provided by every known language, but in practice the relevant signals (in our case, the performative verbs of English) are more often used in talking about speech than in the speech acts and events themselves.

For a student learning an unfamiliar language, the complexity of speech acts can be dramatically illustrated as follows: Just to learn the meanings of the more than 100 vocabulary items in the list above is already a difficult task, because the English verbs of this type do not match neatly with similar verbs in other languages. If the student must learn in addition to this the hundred or so ways (let us say) which the native speaker has at his disposal for performing the speech acts corresponding to each verb (the pragmatic system), the task becomes staggering.

The enormous complexity of pragmatics and corresponding speech acts is just one reason why language teachers often choose to ignore this area, and concentrate instead on the relatively simple linguistic representations of the cognitive acts of seeking and giving information, describing static situations and processes, and formulating instructions for the replication of such situations and processes. Another, and perhaps more important, reason is that many of the speech acts of normal communication are almost impossible to recreate in the language classroom without well-organized and time-consuming role-playing, because pragmatics always involves social and psychological factors which must somehow be introduced into the context along with the linguistic ones. A third reason for short-changing pragmatics and speech acts is that real communicative competence requires that these acts be performed in different varieties or codes of the main language type, and language teachers often find it difficult enough to teach even a single, standard way of expressing cognitive and notional intents.

The easy way out, for the language teacher or curriculum developer, is to provide the students with the means of identifying the most general overt features of the language variety being learned -- the standard grammar, pronunciation, and vocabulary, if you will -- so that any new utterance heard in an actual communicative context (usually outside the classroom) can at least be recognized in these terms. The meaning of a particular speech act can then be inferred, either immediately from the context, or eventually, by comparison with similar examples heard later on.

The final and most compelling reason for the neglect of pragmatics and speech acts is related to our central concern: the use of spoken language through the various oral channels of instruction in the general curriculum areas. As we have seen (in 5.4.), there are in fact very few subject areas in which the learning task requires a wide range of speech acts, either on the part of the teacher or on the part of the students. From the point of view of general curriculum, therefore, there is little justification for including a wide range of speech acts in language instruction. From the point of view of language curriculum, there may be considerably more justification, especially if the student will continue to use the language for communication after he leaves the school. But in order to include pragmatics and speech acts in language curriculum, there must be some way of evaluating or assessing student achievement in these areas, and this remains very difficult to do given current language testing theories and methodology.

The enthusiastic advocates of teaching communicative competence in the language classroom (and their name is legion nowadays) have obviously not thought about these questions very much. They tend to overlook the fact that many language students in the world are more interested in using the new language to learn something else than they are interested in using the language in social situations.

8.3. Interlanguage and fossilization

Before we leave the speaking skills and proceed to a discussion of writing, some further comments on the language learning process are in order. Two previous observations are relevant here: (1) The 'student's version' of a language being learned may be at some distance from the standard version of the same language variety, and in the case of speaking a school language thus would be equivalent to oral channel distance (4.3.); (2) pronunciation is the surface component of oral language which is the quickest to crystallize or fossilize, and also the component which is most affected by socialization of students in schools, so that the style of pronunciation adopted by students in the language most commonly used for peer interaction tends to be determined by that type of interaction rather than by formal instruction (5.6.). We now reconsider these two observations in connection with what has been said about speaking skills, competence, and speech acts.

Interlanguage is a term used by many applied linguists and psycholinguists in slightly different ways, but generally referring to what we have called the 'student's version' of a given language. In learning or acquiring any language (first, second, third, etc.) the learner apparently goes through a succession of approximations of the target language, based on his perception of the language system at any given time and the rules governing it. He constantly tests this system in communicative contexts of one kind or another, making appropriate changes in the rules when he is corrected (and is convinced that the correction is worth paying attention to), when he gets further inputs of linguistic data, or when he sees for himself why he is failing to communicate. This process of trial and error, which is often a conscious process for the older child or the adult learning a new language, results in a constantly changing, highly individual interlanguage, but one which at any given point in time can be investigated and described as if it were a standard language spoken by millions of people. At some point the changes virtually cease. Either the learner is now satisfied with his own version of the target language, for communication or for any other purpose he wishes to use it for, or he has lost his motivation or opportunity for learning it further.

Language instruction in schools undoubtedly has a great deal to do with the formation and change of interlanguages of individual students. (If it doesn't, language teachers should take up other professions.) But, as we have seen, the other communicative contexts of the school also influence it whenever the language concerned has other uses within the school. Particularly, the oral aspect of the interlanguage may be affected by pupil-teacher interaction in the non-language subjects as well as by pupil-peer interaction, besides being directly shaped by the language teacher. Furthermore, the acquisition of communicative competence, if it occurs at all, is more likely to take place *outside* the language classroom.

Communicative competence implies not only the ability to perform and recognize speech acts, but also the ability to perform and recognize them *in different codes or varieties* of the same language type, depending on the social situation and the topic of conversation. Now comes the crucial point: If any aspect of the student's interlanguage is likely to fossilize (i.e. not change further), it will be the pronunciation rules he follows in real communication, after that the syntactic rules, and last of all his selection of vocabulary. When fossilization occurs, and especially fossilization of 'incorrect' pronunciation and grammar, the language teacher for all her efforts will usually be unable to effect the slightest permanent change in the student's actual interlanguage, though she may be able to coerce the student into producing the standard forms in the language classroom from time to time.

It is only when the teacher has complete control over the student's language *use* as well as over his formal language learning that she can hope to steer the development of interlanguage in the desired directions. But this is most likely to happen when the language is being taught merely as part of language *curriculum* -- that is, when it is not used as a medium of instruction or in the other communicative contexts of the school. The language teacher cannot control the influences of general teachers who give instruction in other subjects through the target language medium (often in their own peculiar interlanguage versions of it) any more than she can control what goes on in the corridors or on the playground. And once fossilization has set in, no amount of correction or 'remedial work' is going to do much good.

Individual interlanguages obviously affect writing skills as well as speaking skills, but not quite in the same way. Pronunciation, the aspect of oral skill which is most likely to become fossilized, has only a very indirect influence on the student's production of the typical standardized written version of the school language. At most, sub-standard or deviant pronunciation will cause him to misspell or mispunctuate more than he would if he spoke the standard oral version with confidence. The student's deviant syntactic patterns and lexical choices will show up just as much in writing as in speech, of course, but these aspects of his interlanguage are both less likely to be fossilized and more amenable to correction in the context of written work in the classroom or written assignments, in language or general curriculum. Thus continued active and passive use of the written channels of the school may contribute to significant shortening of the distances between the student's interlanguage and the standard version of that language variety, in spite of the fact that the distances may appear to be very great when the same student is speaking naturally and communicatively with his teachers or his peers.

8.4. What is writing?

The discussion in this chapter so far has concentrated on the active/productive skills of speaking, and the impression may have been given that pragmatics (and, indeed, speech acts), communicative competence, interlanguage, and fossilization are all confined to the use of oral language and have little to do with writing. It is time now to counteract this impression in quite specific terms. In spite of the emphasis which current literature in these areas of linguistics frequently puts on aspects of spoken language, the fact is that *any* kind of oral production potentially has its written-language counterpart, though not its written-language equivalent. Skilled novelists, short story writers, and dramatists can convey not only the pragmatic and kinesic features of oral communication via the printed word, but they can even convey variant pronunciation, after a fashion, through certain literary conventions when they so desire.

In our discussion of reading (7.2.), the incomplete convertibility of what comes through the written and spoken channels 'in the same language' was pointed out. Exactly the same relation holds in this respect between speaking and writing as between understanding and reading -- to believe otherwise is possible, but only if one is deluded by certain notions of creativity and critical sensibility which have nothing to do with the language channels themselves. In other important respects, however, there *are* differences between speaking and writing which are not comparable to differences between listening and reading. An array of the variables involved in speaking and writing will help to make this clear.

'Active' Variable	Oral Channel: Speaking	Written Channel: Writing
1. Message rate and recoverability	1.1. Non-recorded speech: controlled by speaker within certain limits	1.1. Real-time displayed text (e.g. teacher writing on board): controlled by writer but must be reasonably fast
	1.2. Recorded speech: still controlled by speaker, but may be influenced by equipment or other factors	1.2. Normal written text: controlled by writer, can be as he wants, typically less redundant than speech
2. Channel noise and volume/clarity	2.1 Channel interference: electronic or other noise between speaker and hearer	2.1 Faulty paper, pen, typewriter, blackboard, chalk, etc. producing illegible products
	2.2. Background interference, message of wrong volume, etc. impedes self-monitoring	2.2. Too bright, dim, or flickering light impedes self-monitoring of written product
	2.3. Gaps, errors, self-corrections, non-linguistic sounds: speaker cannot avoid unless recording or reading aloud from well-prepared text	2.3. Gaps, errors, self-corrections, non-linguistic symbols: writer can avoid completely unless engaged in real-time display of written product
3. Message producer variables: what the speaker/writer himself contributes to the encoding of	3.1. Speaker's linguistic and communicative competence	3.1. Writer's same
	3.2. Familiarity with context (depends on	3.2. Writer's same

the desired message	speaker's experience)	
	3.3. Cognitive skills, imagination, and creativity of speaker	3.3. Writer's same
	3.4. Communicative intent: in non-recorded speech, must be specific to the pragmatics of situation; in recorded speech and broadcasting, can be generalized to cover a number of possible situations.	3.4. Real-time displayed text: must be specific. Normal written text: can be generalized
	3.5. Attention, set, motivation, etc. of speaker	3.5. Writer's same
	3.6. Familiarity with an audience, which is usually identified in non-recorded, non-broadcast speech	3.6. Familiarity with an audience, which is usually not completely identified except in correspondence, real-time displays, etc.
	3.7. Self-monitoring short-term memory: affects cohesion and redundancy; important in non-recorded speech, including broadcasting	3.7. Self-monitoring and short-term memory: important only when writer is pressed for time; otherwise writer can assume role of reader here
4. Production task variables: what the speaker/writer hopes to accomplish through his message	4.1. No overt response expected: message is for information or storage	4.1. No overt response expected (e.g. novel, memo to file, note-taking, grocery list)
	4.2. Dialogue expected concerning the message itself (e.g.	4.2. Correspondence (or oral communication) expected concerning

lecturer: 'Any questions?') contract, minutes of a meeting	the message itself (e.g. draft of a meeting)
4.3. Other overt response or feedback expected	4.3. Other overt response or feedback expected.

In corresponding comparison of listening with reading (7.1.), the only important differences that showed up were at 1.2 and 4.2, having to do with the rate of scanning and recovery of the text and with the possibility of questioning the originator of the message. In the comparison of the 'active' variables given above, comparable differences between speaking and writing show up only at 1.2, because the original 4.2 was a comprehension task variable rather than a production task variable. In regard to 1.2, the speed and redundancy of speech (recorded or not) is confined within much narrower limits than the speech and redundancy of the normal writing process (i.e. excluding real-time writing displays), in which the writer can be as redundant or non-redundant as he pleases, can write in anything from telegraphic to legal style, and can take as long as he wants to come up with a satisfactory written product.

But there are other important differences between the productive skills which do not obtain between the receptive skills, for example at 2.3, 3.4, 3.6, and 3.7. The correction of errors and the filling of gaps in the final product, and other self-monitoring possibilities which exist for most kinds of writing but only for some kinds of recorded speech and for rehearsed 'reading out loud' of a well-prepared text, are a function of the fact that the writer has the option of becoming his own reader-editor at any time he chooses. The other differences (at 3.4 and 3.6) are even more significant: They stem from the notion of *audience*.

Except in recorded speech and broadcasting, the speaker can usually see who is physically within range of his voice, and this affects both the channel variables and the message variables. In the channel sense, unless he is using a public address system, the speaker must adjust his volume to this audience, speaking neither too softly to exclude part of the audience nor too loudly to alienate its closer members. (English has still other performative verbs, of course, to describe this dimension of speaking -- e.g. murmur, shout, whisper, yell -- as well as verbs to describe the clarity of articulation -- e.g. declaim, chatter, mumble, intone, prattle). In the message sense, if the speaker has any familiarity with this audience, he can adjust his speech variety and style to it and also gauge his particular speech acts to the social interaction possibilities of the situation. In other words, he is free to communicate in the real sense, within the limits of his competence in the chosen speech variety.

The writer, and especially the creative writer as opposed to the technical writer and the business or personal correspondent, seldom has this advantage. Without knowing the actual composition of his audience, and without the possibility of direct feedback from them to give him some sense of what they are like, he can only guess at their characteristics, and his best approach is to try to attract the kind of audience he wants through the language variety and style he uses. If he succeeds, of course, then any pragmatic effects he builds into his writing (the bookish equivalents of speech acts) will also be interpreted correctly and he will have communicated. But the lack of real-time feedback to the creative performer, in terms of laughter, applause, groans or tears, will prevent him from adjusting his communicative strategy as he goes along, as any public or private speaker can do.

Otherwise, the relation between speaking and writing is very much the same as between listening and reading. A definition of the writing process can easily be modelled after the definition of the reading process (7.2.), simply by redefining *literacy* to include both active and passive competence in the mechanics of the language type concerned. Just as reading always involves the extra step of decoding or deciphering some writing system, so writing always involves the extra step of encoding or enciphering it. Apart from the lack of complete convertibility of the spoken and written versions of a language, already noted, and the differences in skill components just discussed, we can then consider speaking and writing, for our purposes, to differ only to the extent that the mechanics of a particular writing system contribute to literacy distance. The new definitions and formulations follow.

Literacy is the ability to convert a text written in a standard language into one or more standard oral versions which are comprehensible to the person who performs the conversion to the same degree as these oral versions would be if vocalized in the same way by another person (the old definition), *and also* the converse ability to convert a standard oral text into a standard written version. Thus literacy is still a kind of competence (a knowledge of mechanics), but one which must be demonstrated by performance in taking dictation as well as in reading aloud. The basic formula for writing competence now becomes:

$$W = S + L$$

The formula for measuring literacy distance is analogous to the one used for reading, where a value for the difficulty of the mechanics (M) of a given language type (X) is added to the value of W, as follows:

$$XW + XM = XS + XL$$

$$\text{or} \quad XW = XS + XL - XM$$

Using Ws, Ss and Ls as the symbols for a particular student's competence in writing, speaking, and literacy respectively, the formula for that student's writing competence becomes:

$$XWs = XSs + XLs - XM$$

This equation can be read as follows: 'The student's writing competence in Language X is equal to his speaking competence and his literacy in it, less the (innate) complexity of the graphic system of Language X'. The implication of the formula is that, other things being equal (which they never are), the student's ability to write in Language X is likely to depend more directly on his ability to speak the language than on his literacy, because it is much easier to improve one's knowledge of mechanics (except in a language like Chinese or Japanese) than it is to improve one's oral proficiency. And, as in the case of the reading formula, the equation implies that knowing (as we usually do) the approximate value of XM, if we can test the student's performance in *any two* of the competencies represented by XWs, XSs, and XLs, we can then predict the third kind of competence. Thus the formula given above is of great importance when we come to the practical problems of language testing (see also 9.8.).

8.5. **Communication vs. creativity**

The foregoing rather simplistic view of the writing process and its components is certain to be unacceptable to many experts on writing and to many teachers of composition. But it is a rational and productive view to adopt with regard to the role of language in education. Just as the process of reading is apt to get confused with study skills, cognitive development, and individual experience, so writing is often seen as something much greater than the encoding or enciphering of what is essentially spoken language content. The creative aspects of writing, particularly, seem to have gotten lost in our equations. I have several answers ready for this sort of objection, potentially to be raised not only by straw men.

The first answer is that, yes, writing as we know it is often highly creative, but so is speaking. There is nothing essentially more creative about a brilliant essay or a well-told short story than there is about an imaginative extemporaneous monologue or an electrifying speech. A first-class novel is not necessarily any more creative than a first-class play or film script meant to be performed orally by actors. As for these latter examples, it might be argued that a play or film script is usually conceived or written down earlier by its author, and therefore qualifies as a product mainly of his writing skill. But this is not exactly so, because a first-class playwright or filmwriter must be able to hear in his mind's ear, so to speak, what the lines will sound like on the stage or screen, and how they will look in print is not terribly important. The actors who perform the drama, likewise, will do some linguistic interpreting of the lines as well as adding bodily movements and kinesics to the script (otherwise, they are not actors but mimes), and they will do this interpreting in oral, not written, form. Simply reading a poem, a play, or a speech aloud, without acting it out, involves speaking skills other than those associated with literacy, and surely most poems, plays, and speeches are meant to be read aloud. The contributions of the 'actor' or the 'reader' may be just as creative as those of the 'writer', but both are in fact concentrating on what the oral versions will sound like to audiences consisting of people who understand the speech variety concerned.

The second answer has to do with the relation between communication and creativity. If creativity has been ruled out of our formulation of the writing process, so has communicative competence (see 8.2., end). The two concepts do overlap, of course, but they are independent factors in all acts of speech and writing. That is to say, a florist who writes a beautiful poem in praise of begonias for his own satisfaction (and then tears it up) is being creative but not communicative; a secretary who efficiently relays a telephone message is communicating but not particularly creating anything. Ruling out both concepts from a definition of speaking and writing does not imply that the corresponding skills should not be taught in schools, or that they should not be included in language instruction where feasible. It means simply that creativity is just as difficult to test as communicative competence, and should not therefore be included in language curriculum as such. In any case, many schools will foster creativity outside the language class, in subject areas such as fine arts, and in many kinds of extracurricular activity.

A related reason for excluding both communicative competence and creativity from language curriculum arises from the experience of schools which have followed the opposite course -- that is, deliberately teaching both as part of 'language arts' courses to elementary students. In cases where the language concerned is spoken natively by most of the pupils, and where basic literacy is not much of a problem, such programs of instruction can be highly successful and popular with children, parents, and teachers alike. But the concern here is with the *sequencing* of language instruction aims: If the average speaking proficiency of the class (c) in the language concerned is very low (Sc = 1 or 2), how are the children going to be orally creative and communicative? If the average literacy is also low (Lc = 1 or 2), and the language has difficult mechanics (M = 3 or 4), how are the children going to write creatively and communicatively?

Without a curriculum sequence which firmly insists on this sort of prerequisite condition:

$$XS - XSc = 2 \text{ or less}$$
$$XW - XWc = 2 \text{ or less}$$

-- before including creative and communicative performance *as aims of the language curriculum,* the result may easily be that none of the desired competences will be achieved in the end, linguistic competence included. This does *not* mean, however, that creative and communicative activities should be avoided in motivating the pupils to learn the basic language and literacy skills. It only means that such activities should not be included in the language instruction program goals.

This leads to the last argument against the presumed undesirability of leaving creativity and communication out of our definition of writing and speaking. An important distinction has to be made between the *aims* of language curriculum and the *methods* of language instruction. If creative and communicative activities in the language classroom help to motivate students toward achieving better language proficiency, there is nothing in our position which says they should not be included in language instruction. Role-playing, for example, provides a useful combination of both communication and creativity which has been found to be popular in language classrooms all over the world. As long as it contributes to motivation, or to actual learning or acquisition of basic language and literacy skills (without consuming more time than other methods which would achieve the same results), it is a successful method and there is no possible objection to it. As soon as role-playing becomes one of the ends of instruction, and not one of the means, the instructional sequence concerned belongs more properly to general curriculum than to language curriculum.

A final point to be made here concerns the relation between communication and creativity which obtains regardless of the media and channels selected for their expression, This point is that (as the heading of the present section implies) communication and creativity are in one sense in opposition to each other. Communication implies that there is a recipient of what is communicated -- an audience, which is either known or unknown, either in a position to react immediately or to react only later if at all. Creative speaking and writing may have such an audience in mind too, and very often does, but the creative speaker or writer may be so far ahead of his audience that he does not really take them into consideration, only hoping that they will eventually catch up to him; their feedback is not necessary to him in the sense that a communicator's feedback is. When the audience is only partly known, or completely unknown, the difference becomes most obvious: The communicator's best strategy in this case is to be deliberately non-creative -- that is, to rely on the most hackneyed phrases and the simplest grammatical devices that the language type or communication code provides. When he hears the whine of the shell, the sergeant does not say 'Let's all assume a prone position' or 'Would you be so kind as to lie down'. He says 'Hit the dirt!' He realizes that this is no time to be creative.

8.6. Audience variables

Just as the mechanical side of reading and writing has an extra component not shared by speaking and listening (encoding or decoding according to one's literacy in the language type concerned), the productive skills of speaking and writing have a component not shared by the receptive skills -- namely, the audience which the speaker/writer has in mind when he produces language. As we have seen in the preceding section, the producer of language for creative purposes may elect to ignore this choice, but for communicative purposes it cannot really be avoided and thus it becomes an added variable in the productive skills. In the task of comprehending spoken and written language, this is never a choice which the listener or reader can make. In other words, the choice of audience is a constant for the consumer, never a variable, because he can only process, accept, reject, or react to the message in whatever form it comes to him through the relevant channel. But the listener/reader, in processing the message, has the option of interpreting not only the speaker/writer's *intent* (the pragmatics of the particular speech or writing act concerned) but also of interpreting the implications of the *form* of the language in which the producer has chosen to encode the message. Both of these interpretations are relevant to the hearer/reader's decision as to whether he is to be included in the audience or not, and hence to whether and how he will react to the message.

From the purely pragmatic point of view, the message consumer's chances of correctly interpreting the message producer's intent depend entirely on his familiarity with speech acts (and their written equivalents) in the particular language variety or varieties concerned -- i.e. the ones the speaker/writer has chosen to use on that occasion. A message consumer with good general communicative competence in the language type involved will, as part of this competence, be familiar with a number of different social and geographic 'lects' within that language type. If he is not familiar with the chosen code, or feels that he is not part of the intended audience for some other reason, he will listen and read only selectively or tune out completely. But as long as the potential message consumer remains part of the audience, he will be affected by the choice of code in another way, whether or not he is fully competent in it; that is, he will form an attitude toward the speaker/writer which is based solely on the choice of code.

These points can be summarized by adding a fifth category of variables to the scheme previously presented (in 7.1., 8.1.), and 8.4.): *audience variables*. For this category, the differences between the oral and written channel are not particularly pertinent, so the variables can be presented in only two columns.

Audience Variables (Category 5)

Speaker's/Writer's Choice	Listener/Reader's Reaction
5.1. Target definition: intended consumers of message (listeners or readers)	5.1. Includes or excludes himself from audience perceived as intended one (may continue or stop reading

			or listening in either case)
5.2.	Choice of code(s): selection of particular speech and language varieties deemed suitable for target audience as already defined (may include code-switching)	5.2.	(If still listening or reading) Reacts to the of code(s) positively, negatively, or indifferently, and forms attitude to speaker/writer on that basis
5.3.	Pragmatics, communicative intends underlying each part of speech or writing act are encoded in the chosen code or codes.	5.3.	Interprets the pragmatics in terms of communicative competence in the chosen code (s) Interpretation is not necessarily the same as the speaker/writer intended).

Even when these choices seem to have been made in advance for the speaker or writer, certain options are still available to any message producer. For example, a public speaker giving a formal address to a pre-selected audience sitting in an auditorium may still decide to ignore a part of that audience and direct his remarks to certain people in it. The writer of a serious scientific article -- let us say, an ostensibly straightforward account of a particular experiment with cautious conclusions drawn from it -- may still have the real pragmatic intent of thoroughly discrediting a conflicting theory or of ridiculing a colleague's experimental techniques;

this intent may be so skillfully embodied in the text that only a small 'in group' of other scientists will detect it. The choice of code may apparently be predetermined in both of the above examples, for the public speaker and the scientific writer, by the formality of the context and the restricted channels of the communication event, but in fact both of the communicators can alter the code in subtle ways if they so desire. The public speaker can do this by making a point or telling a joke in the vernacular, the writer by switching from the strict scientific register to the colloquial to take a swipe at his colleagues, and so forth.

A few comments on listener/reader reactions to the audience variables are also in order. Although the message consumer's affective reactions to the message producer and to the message itself are principally determined by the language forms in which the message is presented (5.2.), the consumer may also form attitudes toward parts of the message content according to whether or not he considers himself a member of the intended audience (5.3.) at that point, and he may form attitudes toward the speaker/writer according to how suitable to the situation he considers the pragmatic intents (as he perceives them) to be. In the examples of the preceding paragraph, a member of the public speaker's audience may take offense at the use of vernacular language on a formal occasion, or he may put a different interpretation on the speaker's remarks by including himself (wrongly) in the intended audience for the remarks. Similarly, the reader of the scientific article, in the second example, may reject the whole argument on the grounds that the writer has allowed his bias to appear, either through inappropriate pragmatic intents or through the use of a non-expository prose style.

Thus the audience variables, though not controlled by listeners and readers, are nevertheless relevant to the amount of attention any consumer allots to a given message, to his interpretation of the communicative intents of that message, and to his attitudes toward the message producer and content. In the extreme case, a potential consumer may decide he is not included in the intended audience (5.1.) and simply tune out. Advertising and sales people usually try to avoid this as a matter of course, because in general the larger the audience the better for their purposes. But there are cases where even the advertiser (or the politician or evangelist) may deliberately want to sacrifice a part of his potential audience in the hope of doing a better job of persuading the part of the audience that remains attentive to his message.

On the other hand, a potential message consumer who correctly perceives that he is not included in the intended audience, may still listen to or read the message for some other reason -- curiosity, lack of something better to do, interest in the message form rather than its content, and so on. And conversely, the creative writer or poet may appear to waive his right to choose a particular audience, in the sense that he writes or speaks to please only himself. But even in this extreme case, the audience is still 'chosen' -- it consists exclusively of unspecified people who think and feel the way the poet does, and who are capable of comprehending the same codes and registers that he employs.

8.7. Error analysis

We now come to the evaluation of the active language performance of students who are acquiring or learning various languages, but who have obviously not yet attained satisfactory competence in them. This evaluation is primarily a function of language testing (Chapter 9), but it is also of relevance to language teaching methodology and to curriculum development. A discussion of the analysis of learner errors is included here because the most easily detectable types of errors are made in connection with speaking and writing, and not in connection with passive language use.

Text analysis (7.7.) attempts to examine the linguistic characteristics of texts assumed to be products of speakers and writers with satisfactory competence in the language type concerned (although such texts too may contain mistakes and gaps). The main purpose of text analysis is to discover what kinds of typical texts are linguistically difficult for the consumer, regardless of his degree of competence, and to identify the source of the difficulty so as to use that knowledge in a number of different ways.

Error analysis, the subject of this section, represents, in a sense, the opposite side of the same coin. In measuring the ability to comprehend spoken and written language, or in any broad evaluation of passive skills and competence, it is difficult to separate the linguistic factors from the non-linguistic ones -- especially factors such as communicative competence, individual experience and cognitive development, and study skills, all of which are involved in understanding spoken and written texts of any kind. The same kind of difficulty will persist with regard to the evaluation of active skills and performance, and especially so in the evaluation of spoken and written products of less-than-competent speakers and writers. It is important, therefore, to provide a framework for error analysis which tends to bypass this kind of problem.

The version of error analysis to be presented here is therefore not quite the standard one. In this version, the objective is to examine the *linguistic* (not the communicative or creative) characteristics of texts which are spoken or written products of persons assumed *a priori* to be less than fully competent in the language type concerned. The central techniques of error analysis then become analogous to those of text analysis: to analyze the texts themselves according to either formal or functional criteria. The communicative aspects of faulty competence need not be neglected in this approach, however. Just as text analysis attempts to discover what linguistic characteristics make some error-free texts more difficult than others (for the fully competent consumer), so error analysis attempts to discover what kinds of learner deviations from linguistic norms typically make the texts produced by the learners difficult for fully competent listeners and readers to interpret correctly and react to appropriately.

The first step in error analysis, in fact, is to determine what types of deviant forms ('error') are apt to be most serious in terms of their effects on the (fully competent) consumer. One of the main purposes (but not the only purpose) of error analysis is to improve linguistic and communicative performance. Even if this were not so, there would be little point in separating error analysis from text analysis if the error types made by both competent and less-than-competent speakers and writers differed only in quantity and not in quality, and if the effects on consumers of both sets of errors were generally comparable. We know from the results of error analysis involving many different languages, however, that the error types and effects of the two groups will be different in kind.

The next steps are to characterize error types in linguistic terms, and then to relate the various linguistic features concerned to the presumed competence of the learner(s) who produced the error, through diagnostic testing (9.7). Normally, such diagnosis is performed, in the educational context, only for categories and groups of learners (e.g. classes, age-groups, ethnic, socioeconomic, or linguistic groups), not for individual learners. In certain kinds of psycholinguistic research, however, and in the building of language learning theory, individual case studies of errors are highly relevant.

The final step in error analysis proper is to identify the ultimate sources, or probable sources, of a given error or error type. There is general agreement among error analysts that the three most important sources of learner errors are *interlingual* (resulting from the interference of another language), *intralingual* (resulting in errors much like those made by children learning the language concerned as a first language), and *intrusive* (resulting from the teaching/learning process itself). The ultimate sources of learner errors, however, can seldom be identified with the same degree of confidence as the effects, linguistic aspects, and immediate sources in terms of learner competence can be, and the information obtained in this phase of error analysis is apt to be more applicable to curriculum development and language teaching methodology in general than to the treatment of specific errors made by particular learners.

The practical pedagogical uses of error analysis, in fact, have to do with the various strategies of dealing with learner errors on a long-term or short-term basis. The long-term strategies focus on error prevention, and include the development and sequencing of language instruction and curriculum materials (sometimes in more than one language type) and the training of teachers to anticipate and forestall certain types of predictable errors in the early stages of the language learning process. The short-term error treatment techniques include making use of the communicative effects and probable sources of errors in treating some errors through immediate correction, others through remedial work, and letting still others pass when they are perceived as a harmless outcome of the normal process of language learning and acquisition.

A taxonomy of learner errors, in any language type, can be worked out such that its dimensions correspond very closely with the various steps in error analysis and with its short-term and long-term applications. The taxonomy would include at least the following dimensions:

(1) Effect of the error on the consumer (a fully competent hearer or reader of the language type concerned who is giving his full attention to the text containing the error);

(2) The linguistic features involved in the error (e.g. pronunciation, vocabulary, grammar, or notional/functional features);

(3) The degree to which the speaker/writer might have avoided the error (diagnosis of the learner's productive competence);

(4) The probable ultimate source of the particular error, or error type (interlingual, intralingual, intrusive).

Since the fourth dimension of this taxonomy is best considered in connection with contrastive analysis (11.7.), only the first three dimensions will be discussed in this section.

Learner errors along the first dimension (in English, for example) may be (a) *harmless*, (b) *confusing*, or c) *misleading*. Here are some typical examples (which can later be used to illustrate the other dimensions of errors as well):

(a)	Harmless:	Yesterday was Thursday, isn't it?
(b)	Confusing:	I got up early tomorrow.
(c)	Misleading:	My baby sister's name is Jane. (if the learner meant to say 'baby-sitter')

Errors of all three types are, in fact, made also by native speakers and writers, through inattention, fatigue, attempts at humor, or slips of the tongue and pen. Harmless errors (a) committed by otherwise competent language producers can be amusing or annoying, but are usually ignored by the hearer or reader, and sometimes not even noticed. Confusing errors (b) evoke requests for clarification, when the communication context makes that possible, or otherwise remain confusing. Their effect is exactly the same as that of ambiguous utterances which contain no actual errors. Misleading errors (c) actually mislead the hearer or reader. For example:

Wife:	Shut the window?
Husband:	Yes.

The wife later finds the window open and angrily closes it. She must have meant by her question either 'Will you (the husband) shut the window?' or 'Have you shut the window?' The husband had interpreted it as meaning 'Shall I (the wife) shut the window?' and was thus misled. The error consisted of leaving out the pronoun and auxiliary in the original question, the wife not realizing the possibility of ambiguity in that context. (If the husband had responded with 'What do you mean?' instead of 'Yes', this would have shown that he found the question confusing rather than misleading.)

Treatment of similar errors by students during language instruction may be quite different. The language teacher has a number of different remedial techniques at her disposal. These include correction by the teacher herself, peer-correction, self-correction, individualized or group remedial work, and many other techniques. When confronted with a harmless error like 9(a) 'Yesterday was Thursday, isn't it?' the teacher may decide that although communication has not been impaired in this particular instance, the error is serious enough, and common enough among the class members, that it deserves correction or even remedial treatment on the spot. The teacher's reaction to the confusing type of error exemplified by (b), 'I got up early tomorrow', may also be corrective, but the correction here may very well be an inappropriate one. Even though the intended meaning is unclear from the surface forms used, the expectation may have been created (by the teacher herself, perhaps) that a statement about the future was called for, so that the correction becomes 'Not *got up*. *Will get up*. I'll get up early tomorrow'. But the student may actually have been trying to say 'I got up early *the next day*' (for example, if his own first language does not distinguish the lexical items 'tomorrow' and 'the next day').

Paradoxically, the teacher may *fail* to correct a truly misleading error such as (c) 'My baby sister's name is Jane', especially when the emphasis of the lesson has been on grammaticality rather than communication. The sentence in question happens to contain no grammatical errors. If the teacher, as message consumer, is not interested in who Jane really is, but only in whether the surface form of the sentence is acceptable, she will almost certainly regard any possible error in it as harmless, or in fact never suspect the possibility of an error.

The potential effects of errors on the spoken or written message consumer in actual communication, rather than in language classroom exercises, must always be considered. The good teacher or textbook writer realizes this, and structures language learning exercises in such a way that some form of simulated communication, at least, takes place in the classroom. The relative seriousness ('gravity') of particular errors, in terms of their potential effect on hearers or readers in real communication, thus becomes one basis on which the treatment of errors for a particular group of learners can be decided on. This decision, however, will not necessarily lead to correction or remedial work.

The second dimension of the error analysis taxonomy has to do with the linguistic description of a particular error. If we adopt a formal rather than a functional approach to linguistic analysis, this leaves only phonology, morphology, lexis, syntax, and discourse features as possible variables along that dimension. (A functional approach to this phase of error analysis is also possible, of course, but since we are essentially looking at learner performance rather than competence here, this type of approach is infinitely more difficult.) In popular terms, we have to be interested in the learner's pronunciation (and/or spelling), his vocabulary, and his grammar at this stage. No matter how this second dimension is treated, however, there will remain errors which are linguistically unclassifiable. In example (b) above,

I got up early tomorrow.

-- the error could be either syntactic or lexical, depending on the meaning intended by the speaker or writer. Either the tense of 'get up' could be corrected (as our hypothetical teacher did earlier) or the lexical item 'tomorrow' could be corrected to 'yesterday', 'today', or (equally probably) 'the next day'. Unless the teacher is absolutely sure of the intended meaning of this statement, in other words, she cannot usefully make a correction anywhere.

A viable classification along the linguistic dimension of errors in English can be made so as to include only three major divisions: lexical, syntactic, and unclassifiable errors. Thus example (a) above contains a harmless error ('isn't it?' for 'wasn't it?') which is clearly syntactic: The wrong tense-form was used in the tag-question. Example (c) ('My baby sister's name is Jane') contains a misleading error which is clearly lexical, although undetected by our hypothetical teacher: 'baby sister' for 'baby-sitter'. Both of these errors could also have had their origins in phonology or pronunciation problems. In example (a) it is conceivable that the student has difficulty in distinguishing 'isn't' from 'wasn't' in the typical throw away delivery of tag-questions, either in terms of perception or production. In example (c), the problem is almost certainly phonological as well as lexical, but we cannot be sure of this without diagnostic testing.

This three-way distinction among lexical, syntactic, and unclassifiable errors turns out to be superior to more complex taxonomies (in English, at least) which include phonology, morphology, and discourse, because unnecessary decisions are avoided. Pronunciation and spelling errors tend to cluster around sound features in a way that cuts across vocabulary, morphology, and syntax. Morphological errors are either word-formation errors (e.g. wrong stress pattern on 'baby-sitter') and hence classifiable as lexical, or they are clause- and phrase-formation errors (e.g. failure to distinguish between 'baby sister' and 'baby's sister') and hence classifiable as syntactic errors. Discourse errors, likewise, either involve discourse markers (lexis) or various large syntactic units and processes such as pronominalization, relativization, and subordination.

The relation between this second, linguistic dimension of errors and the application of error analysis to the development and sequencing of language instruction and curriculum materials is a very close and complex one. A discussion of this relation is deferred for the time being, however, until certain necessary comments have been made about language testing (Chapter 9) and about language instruction (Chapter 10). For the moment it is sufficient to point out that the linguistic dimension of error analysis is by far the most important insofar as the long-term planning of instructional sequences in language curriculum is concerned.

The third dimension of the taxonomy of errors is the dimension of greatest interest to those applied linguists and psycholinguists who do error analysis as part of their overall research on the language teaching/learning/acquisition process. This is the dimension that defines the probable sources of errors in terms of the individual student's *present* stage of interlanguage and habit formation (see 8.3.) rather than in terms of the ultimate sources of his errors. There is considerable literature on this subject, which also partly overlaps (as does the fourth dimension of errors, not discussed here) with contrastive analysis (11.7.). Normally, only specifically-designed diagnostic tests will reveal the status of the learner's linguistic competence at the time he makes an error which is classifiable as lexical or syntactic, but certain inferences are also possible based on more general measures of proficiency or even on teachers' observations.

The approach adopted here to classifying the immediate sources of learner errors is again a broad three-way distinction which has been found useful for the purpose: The categories are (a) mistakes, (b) mismatches, and (c) gaps. These are defined as follows.

(a) *Mistakes* are errors in syntax or lexical selection which the learner has made through carelessness, bad habits, or perhaps simply the desire to communicate rapidly at the expense of precision. The learner 'knows' the correct rule or the appropriate lexical item, but has failed to produce or apply it in this instance. In example (a) above, if the student actually is aware of the fact that 'wasn't it?' is the only possible negative tag in Standard English after the clause 'Yesterday was Thursday', he has simply made a *mistake* in producing the form 'isn't it?'

(b) *Mismatches* are errors which the learner has made by selecting a wrong or unnecessarily ambiguous syntactic pattern or lexical item through real ignorance of the correct and precise form. Thus, in example (b) above, 'I got up early tomorrow', assuming that the student's error is a lexical one caused by his failure to realize that 'tomorrow' is not the same thing as 'the next day', he has made a lexical mismatch in this instance. Or, if he thinks that 'go' can be used to signal the future meaning of 'get', he has made a syntactic mismatch.

(c) *Gaps* are errors of omission, whereby the learner has failed to produce *any* version of a needed lexical item or syntactic pattern in the place where it is needed. The result may be an unfinished spoken or written product, some kind of non-linguistic sound or mark (e.g. scratched-out writing), a hiatus in the flow of oral or written production, or nothing at all. The last possibility is exemplified by the example 'Shut the window?' (syntactic omission of pronoun subject and auxiliary verb). It is also potentially exemplified by the misleading error in (c) 'My baby sister's name is Jane'. If the student has left out the compound-stress signal on 'baby-sitter' as well as mispronouncing the second element of the compound, he is guilty of a gap as well as a mistake or mismatch, with the combination of errors producing the misleading lexical item. Filling this gap (i.e. supplying the compound stress) might have made the other mispronunciation merely confusing, and probably would have led to questioning and ultimate correction by the teacher.

The identification of particular errors or groups of errors as mistakes, mismatches, gaps, and combinations of such error types is much more important for effective classroom correction and remedial teaching than is classification along the other dimensions of errors. Mistakes, for example, are subject to self-correction, especially if they are made in written work. Mismatches, provided the same types of mismatching errors are not being made by entire classes of students, are subject to peer-correction or individualized remedial tasks. If the same kinds of lexical or syntactic mismatches are being made by a whole group of learners, on the other hand, there is a clear case for remedial work in the problem area. Gaps, unless they are unclassifiable as either syntactic or lexical in nature, can simply be filled by the teacher herself as soon as they are detected.

All three immediate sources of errors along this dimension, moreover, since their classification depends on a knowledge of the details of individual, group, or class interlanguages at the time the errors are committed, can be further explored and confirmed by discrete-point diagnostic tests of vocabulary and syntax, as well as by the observation and elicitation of spoken and written products of students in the classroom, which is a normal part of language instruction in any case. Errors which are at first linguistically unclassifiable may later be reclassified as lexical or syntactic as the result of this kind of diagnosis, even in cases where it is impossible to discover the actual intended meaning of the error producer.

In summary, the taxonomy of errors presented here has four dimensions, each including three major categories. If we consider only the first three dimensions, the total number of possible error types is 27. The designations for each error type can be read from left to right off the following display:

Effect on Consumer	Linguistic Source	Source in Producer Competence
Harmless	Lexical	Mistake
Confusing	Syntactic	Mismatch
Misleading	Unclassifiable	Gap

Thus, according to this taxonomy, the error types represented in our original examples could be classified as follows:

(a)	Yesterday was Thursday, isn't it?	Harmless syntactic mistake (mismatch)
(b)	I got up early tomorrow.	Confusing unclassifiable mismatch.

(c) My baby sister's name is Jane.	Misleading lexical mismatch (probably also gap)
(d) Close the window?	Misleading (or confusing) syntactic gap.

It is interesting to note that this same taxonomy needs to be adapted only slightly to cover errors of comprehension as well. In this case, the language learner may be unharmed, confused, or misled by his own lexical, syntactic or unclassifiable errors, which are analogous to mistakes, mismatches, and gaps in active performance. The 'source in producer competence' dimension becomes 'source in consumer competence', but everything else remains the same. This observation leads naturally to the last topic of this chapter, which has to do with the relation between active and passive language competence.

8.8. Active/passive competence

The contrast between the active/productive processing of language and the passive/receptive processing of it, which has been the main theme of this chapter and the preceding one, now provides a means of considering the last remaining type of 'distance' relevant to language competence and performance. Before discussing this distance it would be well to review the others related to it.

Channel distance (3.7.) is the gap between a given oral or written text coming through a certain channel and the student's version of that text. The basic formulas:

Oral: XS - XUp = (the understanding gap)
Written: XW - XRp = (the reading gap)

Modifications of these basic formulas are possible in the school context. For example, when a teacher (t) whose own language proficiency (XPt) is defective is doing the speaking that the student is listening to, the understanding gap may become even larger:

$$(XS + XPt) - XUp = \text{possibly 2 or more.}$$

Or, if a written text has been graded or edited so as to reduce its intrinsic linguistic complexity, text analysis can assign a negative value (-E) to represent the simplification, and the reading gap becomes:

$$XW - E - XRp = \text{possibly zero.}$$

We have seen that such modifications to basic channel distance formulas can also be handled through text analysis (7.7.), provided only we know the comprehensibility index (CI) for the spoken or written text concerned. In this approach both XS and XW can be replaced by XT:

$$XT = XS + CI, \text{ or } XT = XW + CI.$$

Literacy distance (7.5.) is the gap created by complexities in writing systems of various language types, and is a constant in formulas applying to reading and writing (as opposed to speaking and understanding, where the distance is irrelevant). Literacy distance is represented by introducing two new values: (1) a value for complexity of mechanics (M), which adds 1 to 5 points to the value of the written text (W); (2) a value for the reader's degree of literacy (Lp), or his competence to interpret the mechanics of a given written language, this second value (Lp) never being greater than the value assigned to M.

Literacy distance is thus represented in the basic formulas for basic reading and writing proficiency as follows:

$$XRp = XUp + XLp - XM$$
$$XWp = XSp + XLp - XM.$$

Now the last type of distance can be introduced with these other related distances in mind.

Active/passive distance is the theoretical gap between speaking/writing performance as a whole and understanding/reading performance as a whole. The problem in measuring this distance is that the active skills result in primary products, speech and writing respectively, which can be directly assessed and evaluated, while anything but the most rudimentary assessment or evaluation of the passive skills requires some kind of secondary production, which is usually speech or writing again.

Yet the essential relation between active and passive skills must be there; otherwise the whole notion of language proficiency, as competence demonstrated by performance, has to be abandoned. Also we cannot possibly assert that Sp = Up or that Wp = Rp, in the face of all the evidence that there is some kind of distance between the two oral skills and that this distance is very likely the same as that which pertains between the two written-language skills. Whether we can actually measure this distance or not, it exists, and it must take either of the following two forms:

$$\text{Sp} > \text{Up} \quad \text{and} \quad \text{Wp} > \text{Rp}$$

or

$$\text{Sp} < \text{Up} \quad \text{and} \quad \text{Wp} < \text{Rp}.$$

Here we come to the great paradox of language proficiency measurement. We have seen, in this chapter, how the language producer has many options that the language consumer does not have. The speaker or writer can choose his audience, his codes within a general language type, his pragmatic and communicative intents, and of course he can choose the content of what he wants to say. He can avoid difficult words or constructions by paraphrasing or by simply not including concepts difficult to express in the message he produces. He can choose to be creative or not, and it is he who controls the rate, the redundancy, and the clarity or volume of the message. All the hearer or reader can really do is to tune in or tune out, reread the page or replay the tape, listen selectively or skim. If the consumer replies or interrupts, he stops being a message consumer and becomes a message producer himself. In fact, if he reacts in any overt linguistic way to the spoken or written text, he is immediately cast in the role of a speaker or writer.

By all logic, speaking and writing ought to be easier, in the purely linguistic sense, than understanding and reading. Yet both objective tests and subjective evaluations of individual performance and competence suggest that it is the other way around: The typical language learner can understand more than he can say, and he can read better than he can write.

As far as 'objective' language testing is concerned, this paradox is less striking. Most objective language tests take all the options away from the speaker/writer: His language variety and style are chosen for him by the examiner; he cannot be creative or even really choose the content of the message to be conveyed; the communication channel itself is controlled by others; practically all speech acts and pragmatic intents are stripped away except for those dictated by the expected form of response. Most importantly, there is no audience -- only a judge and jury who are not interested in what he has to say, but only in how he says it.

Similarly, most of the extraneous difficulties are removed for the listener/reader in an objective test: He is presented with straightforward, non-pragmatic, non-creative, and often non-communicative samples of standard language; and he is automatically included in the 'audience' (as a judge). In this kind of context, therefore, it is not surprising that little difference turns up between productive and receptive proficiency in the same language for the same individual. But even here most test subjects do better at objective tests of listening and reading than they do at speaking and writing tasks of comparable difficulty. This trend is confirmed, and even magnified, by subjective language proficiency evaluations, such as teacher's ratings, self-ratings, and tests involving essays, extemporaneous speaking, and long oral or written texts for comprehension.

The best solution for this paradox is to accept its implications and look for the factor or factors that make passive processing of language easier than its active counterpart at the same level of linguistic difficulty. There would appear to be only one such crucial factor, and it occurs as Variable 3.4 on our list of variables for two of the skills: the ability of the listener or reader to *infer from context*. Note that this factor does not show up on our list of variables for speaking and writing, but is replaced by 'communicative intent' (see chart in 8.4.). This is because the speaker or writer *makes* the context as he goes along, and any inference he happens to make can only result in self-correction or restatement of what he has already said. On the other hand, the passive language processor *always* has inferencing at his disposal. In very simple terms, if he does not recognize a word or construction in the text, he can guess what it means.

Apart from language testing as such, error analysis tends to support the selection of this crucial factor of inferring in several ways. First, translating and interpreting tasks, as a means of eliciting texts for error analysis, provide some interesting insights. If X is the language the subject is more proficient in, generally speaking, and if Y is the language he is less proficient in, the subject will usually produce less errors in translating or interpreting in the direction Y Æ X than in the direction X Æ Y. (This is not to say he produces a better overall translation going in the first direction, merely a less obviously erroneous one.) One plausible explanation for this phenomenon is that, although the subject is processing language both actively and passively regardless of the direction of translation, whatever inferring skills he has will be of more use to him in going from Y to X than in going from X to Y, because the meaning of the original text written in Language X (his better language) is likely to be already fairly clear to him without much inferring, while the original text in Y allows him to use his inferring skill to better advantage. In producing his own X or Y translation, on the other hand, the subject's basic proficiency in that language is the only constant, and to the extent that he has understand the original text correctly his X product is bound to be better than his Y product.

Second, error analysis of products involving the use of only one language type also tends to support the importance of the inferring skill. In translating and interpreting, language variety distance (X-Y or Y-X) is always involved, and this distance becomes a factor in the equation. But error analysis of products elicited through the application of the simpler study skills in conjunction with a single language type (Chapter 6) shows that linguistic inferring skill is also an important factor here. The typical subject can draw a picture or other visual display from verbal instructions more successfully than he can describe a similar picture in his own words, regardless of his basic proficiency in the language type concerned. The typical subject can behaviorally follow or act out a process described verbally better than he can narrate the process or give someone else the instructions for replicating it.

The lower the subject's overall proficiency in the language type concerned, the greater the difference in active and passive performance is likely to be, from the point of view of accuracy. Like the allied skills of translating and interpreting, the art of paraphrasing also tends to confirm this hypothesis. In a familiar language, the subject will make few overt errors in paraphrasing in any case, but in an unfamiliar language errors are very frequent, and can more often be traced to productive proficiency than to receptive proficiency, at least when the stimuli for the paraphrase are given in a meaningful context.

Lastly, the identification of inferring as the crucial factor (that makes understanding and reading easier than speaking and writing at the same levels of linguistic difficulty) is also supported by differences in creative and non-creative performance errors. In all the examples given so far, the subject has little control over the message content: A text for translation, a picture or its verbal description, a process or the instructions for replicating it, a text to be paraphrased in the same language, and so on. The subject has very little creative latitude in such exercises. It has been noted that when the less-than-proficient subject is given some freedom to determine the content of his own message he still makes plenty of errors, but the errors are apt to be of a difference nature and less serious. This is partly because the subject has *avoidance strategy* available to him: That is, he can choose not to say things that he knows he does not know how to say in the target language.

One result of avoidance strategy is that fewer mismatches and hardly any gaps (see 8.7.) occur in genuinely creative expression, although the number of mistakes may remain the same as in controlled content expression. Going in the other direction, however, *errors of comprehension* by the same subject are not greatly affected by whether the text is highly creative or deliberately factual (provided the overall difficulty indices of the texts are comparable). Again, the evidence points to inferencing skill as the crucial factor. This helps to explain why errors of comprehension, as we have seen, can be classified using the same taxonomy as is applied to errors of production.

It is of course possible to argue that the skill of inferring whatever that may be, is composed of many sub-component skills. The argument against further breakdown of this factor, however, is analogous to the argument against further breakdown of the literacy factor (7.3.) -- that is, even if the sub-skills could be identified it would be very difficult to measure them independently of each other. (The measurement of the ability to infer itself, it turns out, has to be done by inference -- it is frightening to contemplate the problems involved in measuring presumed components of the inferring skill.) But if we accept that the ability to infer from context is a language-specific, as well as a cognitive and experience-determined skill, the way will be open to analyze language proficiency in the four traditional skill areas in such a way that basic proficiency (P) remains a constant in all formulations of skill components.

> First, we repeat the definition of language proficiency (from 5.8, end): 'Language proficiency is the ability (competence) to speak, understand, read, and write texts of a single, pre-defined languages type, as measured by tests of actual performance, such as those which define language curriculum'.

For the basic definitions of the four component skills of language proficiency, then, if we equate speaking proficiency with basic language proficiency, we need only three terms to express the values of S, U, W, and R. The three terms:

XPp = a given student' s basic proficiency in language type X (from another point of view, his interlanguage version of X)

XLp = a given student's literacy, or knowledge of the mechanics of the standard written version of X

XIp = a given student's ability to infer from context in Language X (this ability being presumed to vary from one language type to another)

The basic skill formulas:

Speaking: XSP = XPp
Understanding: XUp = XPp + XIp
Writing: XWp = XPp + XLp - XM
Reading: XRp = XPp + XIp - XLp - XM

Using these formulas, channel (or text) distances can now be rewritten in terms of skills. In the formulas, XT represents a standard, error-free version of a text that a student is trying to create orally, and also such as text as already produced by a fully proficient speaker of X (formerly symbolized as XS). XT + M, then, represents the corresponding types of written texts. The formulas for channel distance:

Speaking: XT - XRp
Understanding: XT - XPp - XIp
Writing: XT + XM - XPp - XLp
Reading: XT + XM - XPp - XIp - XLp

CHAPTER 9

LANGUAGE TESTING

9.1. Purposes of language tests
9.2. Channel and medium of stimulus and response
9.3. Other aspects of the stimulus
9.4. Other aspects of the response
9.5. Aptitude testing
9.6. Achievement testing
9.7. Diagnostic testing
9.8. Proficiency testing

Formal language tests and examinations define language curriculum (1.8), but they do not by themselves determine the objectives, content, methodology, or even the total evaluation of language instruction in schools. This distinction is an important one, and cannot be overemphasized. Language tests, moreover, are developed and administered by individual teachers, schools, and school systems for reasons that have little to do with program or student evaluation -- for example, for diagnostic reasons or for experimental research purposes.

In this chapter and the next two, we will be looking at the complex relationships among language tests, the aims of language and general curriculum, and the engineering of language instruction itself. Since tests and examinations of various kinds for various purposes are the glue that holds this structure together, they are central to the consideration of all the other issues. In the first four sections of this chapter, we will be examining the technical parameters of language testing: why tests are given, what can be tested, and how it can be tested.

The second half of the chapter examines the four main categories of language testing in some detail: aptitude, achievement, diagnostic, and proficiency testing. The uses to which the information obtained from each type of test can be put, whether or not the test was designed or administered for that specific purpose, are discussed in the context of the technical constraints on the measurement of language items, skills, and overall mastery. The very last section (9.8.) is devoted to the measurement of language proficiency, and relates this to the concept of proficiency as developed in Chapters 5 - 8, and also to the concept of channel distance, first introduced in Chapters 3 and 4.

The validity and reliability of language tests, although an important educational concern, are not discussed in any detail here, because the principles are essentially the same for both language and general testing. Nearly everything else, however, is different.

9.1. Purposes of language tests

There are two ways of looking at the purposes for which language tests are designed and administered before, during, and after schooling. One way is to look at the *ostensible* purpose, or the motivation behind the design and administration of particular types of tests, to accept this as given, then to draw up some sort of taxonomy of purposes, and finally to examine the tests in each category and find out what they have in common. This is essentially the approach we have taken to the classification of language media types in Chapter 2 which later had to be revised. The other way is to begin by looking at language tests which are actually given in some sort of connection with schooling, for whatever purpose, and then to classify these tests according to what kind of *information* they provide and the *uses* to which this information can be put. This second approach provides a shortcut to understanding the practical problems and theoretical concerns of language testing, and has been adopted for this chapter.

Nevertheless, a brief discussion of the ostensible purposes of language testing is also in order. Language tests are developed and administered at many educational levels, from the international level through national and provincial school system down to individual schools and individual teachers. There is not much to be generalized from this fact, except to observe that (whatever the ostensible purpose of the test may be) the higher the level of language curriculum and instruction, the more likely it is that the test will be standardized, and that it will pertain to language curriculum more than to language instruction.

Outside of education, language tests are also administered to qualify people for certain jobs and professions, and even for some hobbies and unpaid work (for example, private airplane pilots and museum volunteers). They are used to screen people for overseas assignments or earmark them for language training prior to such assignments. Some countries require all civil servants, regardless of their actual functions, to pass language examinations (usually in the national language) either before they enter the service or as a condition of remaining in it. State, provincial, and local jurisdictions may also have similar language requirements. A few religious organizations, other than those that sponsor educational systems of their own, likewise have language requirements for their clergymen or officials. Judges and other court officials in some countries have the responsibility of determining, through on-the-spot assessment, whether a defendant is linguistically capable of undergoing trial, or a witness is qualified to give evidence, in one of the court's language media without an interpreter. At the very fringe of unofficial, non-education language testing are ad-hoc assessments by border police or immigration officials to determine whether a suspected alien (for example, one with possibly false papers) should be investigated further.

The purpose of a given language test, from the point of view of the test developer and/or the administrator, is usually one of the following.

(1) To measure individual language proficiency or achievement in a specific language medium, in terms of entrance and exit requirements of school programs and instructional sequences: for example, secondary school leaving examinations, university entrance examinations

(2) To measure individual language achievement or proficiency in terms of qualification or certification in the language subject or language medium only: for example, examinations for translators, diplomats, civil servants, and others for whom some degree of bilingualism is expected; 'language requirements' of schools and universities which can be satisfied in a number of different language media, with the choice left to the student

(3) To measure individual or group achievement, proficiency, or aptitude levels with a view to treatment, within a fixed instructional framework, for individuals or groups already admitted to an educational program: for example, in order to stream or group language classes, to

provide individualized treatment within classes, and to make decisions as to whether students or groups should undertake certain language learning programs

(4) To measure progress or achievement of individuals and groups in a given overall sequence of language instruction: for example, tests at the end of modules in programmed instruction (often designed for self-administration), school or class tests given at regular intervals (weekly, monthly, etc.) or according to the place in the instructional sequence that a class has reached in terms of the teaching/learning program, or should have reached in terms of the teaching plan

(5) To measure the achievement of individual students of specific *criteria* within the total teaching/learning program (in this case, the criteria need not be sequenced), or to measure the achievement or proficiency of groups of students, in terms of these same criteria, for diagnostic purposes

(6) To measure the aptitude, achievement, or proficiency of (usually very large) groups of students, teachers, citizens, or officials for purposes of needs assessment, program design, evaluation, accountability, or other kinds of research leading to possible changes in the aims of language curriculum, or in the planning and implementation of language programs outside of education

(7) To conduct similar kinds of language testing with a view to comparing the results with data from various measures of individual capabilities in both language and on-language areas: for example, previous scores on other language tests, IQ measures, tests of general knowledge and 'verbal skills', mathematical, scientific, or mechanical aptitude tests, measures of cognitive development, and so forth

(8) To conduct similar kinds of tests with individuals or groups as part of research involving the language medium itself: for example, in linguistic, psycholinguistic, and sociolinguistic research of the experimental kind, or in research on the nature of communicative competence

While this is a fairly exhaustive list, there are still other reasons why language tests are designed and/or administered. Tests are sometimes given simply to motivate students to study, or because all teachers in a school are expected to give tests at regular intervals, or because parents insist on numerical ratings and/or rankings of their children in various subjects. In many such cases, not much practical use is made of the scores or of the information obtained from the test. In the worst case, the avowed purpose of the language test may be clearly stated, but the test is not even scored, or the test is scored but the results are not used, or the results are used for entirely different purposes.

In this last connection, there are known instances in which even nationwide language examinations have not been scored, either because of breakdowns in the processing equipment or (worse) changes in language policy after the test had been administered. In at least one country, a national examination with the ostensible purpose of primary school program evaluation (purpose 6 above) has been routinely used to select outstanding pupils for elite secondary schools (purpose 1). Although no official announcement of this practice was ever made, it was not long before parents, pupils, teachers, and school principals had figured it out and were acting accordingly. In an even more blatant type of misadministration, possibly occurring in several countries, the results of an English language achievement examination (purpose 2) have been used as the sole criterion for acceptance into an academic program at a higher level (purpose 1) without telling the candidates that their marks in general curriculum subjects (taught in a national language medium) were irrelevant, and without conducting any sort of prior research (purpose 7) which might have justified such a practice.

These are some of the reasons why a classification of the ostensible purposes of language testing, like the one represented in the eight general purposes listed earlier, has not been adopted as a working assumption for this section. The preferred approach is to look at the *form and substance* of existing language tests and examinations. A taxonomy can then be constructed which will allow inferences to be made about purposes but at the same time will concentrate on the actual uses to which the information obtained from the tests might be put. Such a taxonomy would have at least five dimensions, as follows:

Types of linguistic information obtained (treated in this section)
Possible uses of the information (corresponds roughly to purposes)
The nature of the test stimuli
The nature of the expected responses
Technical aspects: scoring, reliability, validity, security, etc. (not discussed in this chapter)

The first dimension of language testing covers the different kinds of linguistic information that can be obtained from a test. This dimension is independent of the second, because different kinds of information can be obtained from any test, regardless of its avowed purposes and the possible uses of its results. For example, all test stimuli and the responses to these stimuli constitute a kind of discourse -- in most cases it is quasi-discourse, but real interactive discourse is also possible. Because of the discourse structure, many kinds of non-linguistic information can be derived from a typical language test. Inferences can be made about cognitive and study skills, social skills, individual experience, familiarity with the cultural matrix, competence in kinesic and notational codes, communication strategies, and so on. As in the case of text and discourse analysis, however, an effort must be made to separate linguistic from non-linguistic substance.

The linguistic forms and functions that are emphasized in the typical language test can yield at least three types of information about the examinee's competence and performance:

(a) His control of discrete items of phonology, morphology, lexis, syntax, overt discourse markers, and stylistic variants -- sometimes, but not always, related to their semantic and pragmatic referents
(b) His separate language and literacy skills, including not only speaking, understanding, reading, and writing but also translating, interpreting, taking dictation, and reading aloud
(c) His integrative performance involving several skills (b) and all the discrete areas (a) -- if the performance is intended to be meaningful, and is at least theoretically pragmatic and communicative, and potentially creative as well

Since the differences among discrete-point, skills-oriented, and integrative approaches to language analysis have already been discussed, no further characterization of these approaches to language testing is necessary here. In practical terms, discrete-point language tests are relatively easy to construct and administer, tests of separate language skills only slightly more difficult, and tests of integrative performance the most difficult of all to design, conduct, and score.

The second dimension of our taxonomy includes four natural, but rather broad categories corresponding to the main uses that can be made of language test results. The principal criterion of the classification is the direction in which the information can be applied: to past events, to future events, to both past and future events, or to the present only.

(a) *Aptitude tests* look to the future, in the sense that the test subject's past history is irrelevant but his future is highly relevant. Aptitude tests are used for predicting the success of individual students in future language learning generally, in learning a particular language, or following a specific sequence of language instruction.
(b) *Achievement tests* look backward. They are used for measuring the degree to which language students have learned what it was intended for

them to learn in the whole of an instructional sequence (teacher-directed or self-administered), or in any part thereof. Achievement tests are also used to determine whether students have met various criteria specified by a language syllabus, regardless of the sequence of instruction.

(c) *Diagnostic tests* look both forward and backward, in the sense that both the students' past language history and his future progress in the same language medium are relevant. Diagnostic tests are used for identifying strong and weak points in the overall language proficiency of individual students and groups of students, with a view to rectifying the weak points in forthcoming instruction or (occasionally) making adjustments to the language syllabus itself.

(d) *Proficiency tests* look neither forward nor backward. They attempt to measure the individual's current overall proficiency in a given language medium, without reference to whether the proficiency was acquired, learned, or taught, or whether the individual intends to continue learning and using the language. Proficiency tests, however, are not necessarily tests of integrative performance -- many existing ones, in fact, are made up of discrete point items and tests of separate skills.

Note that achievement tests are always associated with language instruction of some kind, that proficiency tests never are, and that diagnostic and aptitude tests may or may not be associated. A separate section later in the chapter is devoted to each of these types of tests.

9.2. Channel and medium of stimulus and response

The third and fourth dimensions of language testing have to do with the language channels and media of the test stimuli and the expected student responses. These two dimensions are best treated together, because the parallels between the linguistic nature of stimuli and the linguistic nature of responses are almost perfect, and non-verbal channels can be used at either end of the language testing procedure.

By 'language medium' we do not mean here the language variety in which the oral or written *test instructions* are conveyed to the student, telling him what tasks he is to perform in the test. Test instructions are normally written or given in the language type which the student is assumed to read or understand best -- usually (but not always) this corresponds to the medium of instruction in general curriculum. In any case, the medium of test instructions is a constant in all testing, in both language and general curriculum, and need not be considered further here.

In every language test, however, some *stimulus* must be provided by the test designer which will cause the student to demonstrate his proficiency in the language being tested (XPp) or some specific aspect of performance in it, by responding to the stimulus in some structured way (conveyed by the test instructions). The examiner could, of course, simply instruct the examinee to 'Say something' or 'Write something', or even 'Read something aloud', but this would not meet the normal criteria of language testing. (Note that the one thing the examiner could *not* say, if he expected some kind of feedback from the examinee, is 'Listen to something'.) Needless to say, virtually all language tests are more specific than this, and therefore involve *test stimuli*.

These test stimuli (or texts -- see 1.4.) can be verbal or non-verbal, but in the latter case the expected student responses must be verbal ones; otherwise, the test ceases to be a language test. As pointed out earlier (1.6.), the channels used in language testing, both for stimuli and for expected responses, correspond exactly to the channels of instruction: oral, written, and non-verbal. And since students can learn from tests, there is also a close resemblance to channel use in self-instructional sequences.

In some kinds of language testing, two different *media* are also involved in stimuli and responses, quite apart from the language of the test instructions. For example, all language tests which require the student to interpret or translate involve the use of two media: one in the stimuli, and the other in the response. Let us symbolize the target language of the test (the language about which information on student proficiency is being sought, regardless of the purpose of the test) as X, designate the other language (presumed to be one in which the student is highly proficient) as Y, and symbolize all non-verbal channel as NV. The possible combinations of stimulus and response media and channels, in the normal language test, are set forth in the following tabulation.

Medium/channel Combinations	Third Dimension: Stimulus	Fourth Dimension: Expected Responses
1. Oral channel, target language	XS	XS, XW, YS, YW, or NV
2. Oral channel, student's language	YS	XS, XW
3. Written channel, target language	XW	XS, XW, YS, YW, or NV
4. Written channel, student's language	YW	XS, XW
5. Non-verbal channel	NV	XS, XW

In mass language testing and in the administration of standardized tests, because of the constraints of presenting oral and non-verbal stimuli of good reliability and clarity, and problems of recording the responses, the most frequent stimulus-response combination in the school context is XW→XW; that is, written test items in the target language to which the student responds by writing something in the target language. Also very common is XW→NV, in which the student simply indicates the correct answer by making some kind of a non-linguistic mark. The next most frequent channel-medium combination is probably XS→XW (XS recorded on tapes or discs).

The instructions for language tests are very often given in YW, unless XW is also the students' best language or only common language, as in 'first-language' testing. But all of the stimulus-response combinations listed above occur when face-to-face interviews between examiner and examinee are feasible, when audiovisual equipment is readily available for giving stimuli and recording responses -- as, for example, when pre-recorded films, film-strips, or videotapes need to be exhibited to the examinees. If the results of the examination can be scored by individuals rather than by data processing equipment, of course, there is much more latitude in the choice of stimulus and response channels and media.

Below are some examples of all the possible stimulus-response combinations relevant to language testing:

XS → XS	An interview, in which the examiner asks questions or provides other spoken stimuli and the student responds orally.
XS → XW	A dictation, oral comprehension test, or oral cloze test with written answers produced (not selected) by the student.
XS → YS	The student interprets or summarizes an oral message from the target language into his own.
XS → YW	The student writes a summary or answers questions in his own language after listening to a target language oral text. XS→NV The student obeys oral instructions by acting them out or by producing a visual display; answers objective questions by making a mark or behavioral signal (e.g. nodding or shaking his head).
YS → XS	The student interprets or summarizes an oral message from his own language into the target language.
YS → XW	The student writes a summary in the target language after listening to an oral text in his own language.
XW→XS	Reading aloud or orally summarizing a target language written text.

XW→XW	The most common type of language test (see above).
XW→YS	The student answers questions or summarizes orally in his own language after reading a target language text.
XW→YW	A translation or written summary from the target language into the student's own language.
XW→ NV	A student answers objective written questions by making a non-linguistic mark on paper; obeys written instructions by acting them out or producing a visual display.
YW→ XS	The student summarizes, tells a story or otherwise communicates orally in the target language after reading a text or set of instructions in his own language.
YW→ XW	Translation or written summary from own language to target language.
NV→ XS	The student orally describes the examiner's behavior, a picture, a natural object, an artifact, or a process in the target language, or he narrates orally from a series of pictures, a film, or a videotape.
NV→ XW	The student writes a description or narration as above.

As can be seen from the above list, the channels and media of responses, and the kinds of content encoded in them, are in no way different from the channels, media, and texts of stimuli. The only restrictions in language testing are on the possible combinations of stimuli and responses, plus the hardware constraints of delivering stimuli and recording responses.

9.3. **Other aspects of the stimulus**

The fifth dimension of language testing, the aspects of stimuli apart from their channel and medium characteristics, is really several dimensions, because there are a number of other independent variables in stimuli which are lumped together here for the sake of brevity. From the point of view of the receiver of a *verbal* stimulus (oral or written, in whatever medium), these other variables correspond exactly to some of the variables we found in the analysis of listening and reading skills and processes (in Chapter 7). These receptive variables are repeated here as headings, along with relevant questions framed from the point of view of the language test subject rather than from that of a casual listener or reader of a text. (See Section 7.1. for the numbering system used here.)

1.1.-1.2. *Message rate and recoverability*: Is the written stimulus displayed, and if so can the student control the speed at which it moves or is replaced? If the stimulus is printed or otherwise inscribed on paper, can the student refer backwards and forwards in the test format, or must he turn the paper as ordered by the examiner? If the stimulus is oral, at what rate is it delivered? If it is recorded, can the student replay or skip forward to another portion of the tape, must he play straight through, or does he not control the playback at all?

2.1.-2.3 *Channel noise and volume/brilliance*: Is the written stimulus legible and free of misprints and smears, and is the light on the text adequate for reading? Is the oral stimulus audible and free of channel noise and misspeaking, and how much background noise is there in the examination room? (Some kinds of language tests involve deliberate insertion of noise in the oral or written stimuli.)

3.1.-3.7. *Consumer variables* (reinterpreted as demands on the consumer made by the nature of the test stimuli)

3.1. Aspects of the student's passive linguistic competence required by the stimulus are already covered by the first dimension of testing (9.1.).

But to what extent are there also demands on his communicative competence?

3.2. Is the context familiar, or does the stimulus require special non-linguistic experience on the part of the student being tested? (This question is highly relevant in all language testing. Achievement tests are based on fixed instructional sequences, in which unusual vocabulary items or structures may have been taught in specialized contexts and can legitimately be tested. The same items might be out of place on a proficiency test, but might reasonably occur on a diagnostic test, especially on one which seeks information for planning a particular future sequence of instruction.)

3.3. To what extent are there demands on the student's cognitive skills? For example, are the stimuli well presented and properly ordered, or presented in such a haphazard way that the student is confused? To what extent are study skills involved?

3.4. Ability to infer from context: This is considered a measurable linguistic skill (see 8.8.), so that in the context of language testing it become a variable of a different kind -- a dependent rather than an independent one in most cases.

3.5. Are the stimuli overly dense in content, requiring the student to pay constant attention to detail, or is there sufficient repetition, redundancy, and other features of natural speech and writing built into the stimuli so that the student can relax his vigilance? Is selection among alternative stimuli permitted? Can the student learn something from the test stimuli, linguistically speaking, which will be useful to him in responding to other stimuli in the same test? Are the stimuli of sufficient intrinsic interest to provide the student with some motivation to perform well, over and beyond his fear of failing the test?

3.6. How familiar is the student with the spoken or written style of the stimuli? Are they encoded in the same variety of the language type that is used in the school? Are there different rules and varieties of language incorporated in the same tests? Especially in terms of the pronunciation of oral stimuli, is the style similar enough to his own teachers' pronunciation to enable the student to adjust easily?

3.7. What kinds of demands do the stimuli make on the student's perception and short-term memory? Are the stimuli very lengthy ones, or are they short enough so that eye movement and oral recall are held to a minimum? (This last is an important variable in all forms of educational measurement, but it is particularly important in language testing -- for example, when information about students' reading and listening comprehension is explicitly being sought.)

4.1.-4.3. *Comprehension task variables*: The comprehension task for the student undergoing a language test is a constant: He is expected to provide feedback of some sort, usually in the form of a predetermined type of structured response, and the variables of the response are treated in the next section. So far as the passive role of language proficiency is concerned, there is only one important variable here: How well are the instructions concerning the nature of the expected responses understood by the examinee? If the instructions are in the target language, of course, this is very often a language not well understood by the student (otherwise, the language test would not be necessary), and the variable becomes highly significant, affecting the student's entire performance on the test. Even if the test instructions are given in the student's own best language, however, there may be some channel and/or literacy distance involved which affects his performance with regard to the target language.

Under this general heading (of other aspects of stimuli) we might also include the student's reaction to the audience variables of the examiner (see Section 8.6.). Although the examinee is automatically a member of the 'audience' of the test stimuli, he may choose to disassociate himself from this audience in much the same way as the casual listener or reader does -- that is, by not performing on the test as well as he might, by not providing certain kinds of expected responses, or by not attempting the test at all. (Even on language achievement examinations at levels as high as the national curriculum level, in fact, students have been known to hand in completely blank answer sheets, perhaps as a way of saying that they felt they should not have been included in the test's audience in the first place.) Any decision of this kind will also be affected to some degree, likewise, by the student's reaction to the choice of code and the pragmatics of the test stimuli.

There may be, of course, other factors in the stimuli not covered by the four sets of variables in this analysis, which concentrates on the linguistic aspects of the stimulus and the skills required for its potential reception by the examinee. If the stimulus is a non-verbal one, however, all of the same variables, or variables parallel to them, are potentially present (except number 3.1 and 3.4 above). Even variable 3.6, for example, only has to be worded in cultural, rather than linguistic, terms in order to be applicable: 'How familiar is the student with the pictorial style of the stimuli or other conventionalized representations of realia (e.g. a policeman in uniform, the stimulated sound of horses galloping)? Are there different styles of graphic or visual stimuli in the same test? and so forth. Still other variables in non-verbal stimuli, on the other hand, are probably not covered by this group of dimensions.

Besides the direct stimuli of the test itself, both verbal and non-verbal, there may be other stimuli explicitly permitted or surreptitiously available to the student in the testing situation. This constitutes our sixth dimension of testing variables (9.1.). If these additional inputs are deliberately allowed or provided to the examinee, they are obviously thought capable of improving his performance in the test. If they are obtained surreptitiously, the examinee himself obviously thinks they are helpful. But in practice the additional inputs may be harmful, irrelevant, or overly time-consuming as well as being helpful to the student. We add another dimension of stimulus variables to cover this contingency -- a dimension which is irrelevant to normal listening and reading comprehension and hence has not been discussed before. (Numbers in the 6.0's are arbitrarily assigned to this category.)

6.1.-6.3. *Outside stimuli* (types of verbal stimuli not present in the test itself, but available to the student as potential aids to his performance on the test)
- 6.1. Reference materials: dictionaries, grammars, bilingual glossaries, etc.
- 6.2. Help from a teacher, invigilator, or the examiner himself.
- 6.3. Verbal inputs from other examinees (in an unproctored or insufficiently proctored test): whispered advice, visible answer sheets, or audible responses of other students.

These outside stimuli, of course, will exhibit the same kinds of variation as the fixed stimuli of the test, in terms of their linguistic and skills-related characteristics, and hence they constitute an entire new group of dimension rather than a sub-category of test stimulus variables.

9.4. Other aspects of the response

This dimension, like the preceding ones, is actually a bundle of dimensions corresponding to variables in the response other than the media and channel variables (which are identical for both stimuli and responses). One of the most important dimensions in responses, moreover, does not show up in the taxonomy for normal speaking and writing variables at all, because it essentially involves a *non-verbal* response to a part of the stimulus which provides a finite number of choices or options. This is the dimension *selection of response* as opposed to *actual production* of the response (verbal or non-verbal) by the student.

We have separated this out as a seventh dimension of language testing and have inserted it before the other aspects of responses because of its fundamental importance to language testing theory and practice. Some analysts of language testing, in fact, consider it to be the criterion which separates 'objective' from 'subjective' test items. In our view this is an oversimplification (see also variable 3.3, below) because there are *degrees of creativity* involved in responding to typical language test questions, and there is no simple dichotomy between selecting from provided alternatives and producing a response independently, but rather a continuum of freedom in the response -- in other words, a dimension like the other dimensions of language testing.

The gradations in the freedom of the response can be seen in the following examples of the continuum from non-verbal to fully verbal responses.

'Objective' test item type	Non-verbal response	Partly linguistic response
Multiple choice question	Student circles or otherwise marks correct answers Student raises hand when he hears correct answer	Student writes in a blank, calls out letter or number corresponding to correct answer (must have at least that degree of productive skill)
True-false question	Student circles 'T' or 'F', nods or shakes head	Student writes 'T' or 'F' or calls out 'True' or 'False'
Matching of items in columns	Student draws lines between matching items in the columns	Student writes numbers or letters in blanks

Elimination of items that do not belong in a list	Student crosses out or marks the items that do not fit the category	Student writes numbers or letters
Locating an error in a text	Student circles or underlines error	Student corrects the error
Reordering a text or hierarchy of items presented in random order	Completely non-verbal response is difficult but still possible (e.g. drawing arrows)	Student (a) renumbers, or b) recopies the text or list of items in the correct order
One-word answer with limited possibilities, options not actually supplied	e.g. 'Is today Monday or Tuesday?' -- non-verbal response no longer possible	Student produces (not selects) answer from a limited number of possibilities
Standard cloze tests: blanks to be filled with single words	Non-verbal response not possible (unless options are given, as in modified cloze test)	Student produces from an infinite number of possibilities (the whole vocabulary of the target language)

Note that the *length* of the expected response has nothing to do with the degree of creativity, or the gradations of freedom, in the response. The options to be selected from in a standard multiple-choice test item may be quite long, but the examinee still does not have to produce any specimen of the target language in order to respond. Conversely, although only one word at a time has to be produced in a standard cloze test, the response has now reached the stage of real linguistic productivity or performance. A truly creative response, in which the student must produce not only words, but also syntactic constructions and discourse, can likewise be of any length --

from a single sentence to an essay of several pages or a recorded speech lasting several minutes. Thus the freedom-of-response dimension is shown to be an independent variable. And, as the above list of examples illustrates, the transition from non-verbal responses is not abrupt, but gradual.

We now turn our attention back to the eighth dimension: other aspects of the response. Unlike the corresponding variables of the stimulus (9.3.), the productive variables of ordinary speaking and writing do not all recur in the language testing situation. We will follow the same numbering system as before however (the one given in Section 8.4.) in framing the relevant questions for each variable that occurs, and in noting the omissions.

1.1.-1.3. *Message rate and recoverability*: Is the timing of the student's response to a given stimulus controlled by the examiner (for example, must he respond within two seconds of receiving the stimulus?) or is it performance in the test as a whole (e.g. one hour)? Is the expected tempo of the oral response specified (fast, normal speed, slow)? Is there sufficient space on the answer sheet, or interval on a pre-recorded tape, for a response of the required length to be inserted without the necessity for hurried speech or cramped writing? To what extent is the student allowed to be redundant without being penalized for repeating himself (as in an essay, an oral description, or narration)? Must he be as concise as possible in every response? Is he expected to produce normal (redundant) speech and writing, or will he be given high marks for producing a lot of text in the time or space provided? and so on.

2.1.-2.3. *Channel noise and volume/clarity*: What is the channel provided for the response? In speaking, can the student see his audience and judge the proper volume, and if not, what volume is expected? If the student records his speech electronically, how good is the equipment and how familiar is the student with its operation? In writing, are the paper and writing instruments provided, or can the student bring his own? How much background noise (including light as well as sound interference) is present in the testing location? Is the student expected to produce perfect finished specimens of the target language all the time, or is he permitted self-corrections, hesitation noises, gaps, and crossing out of written work?

3.1.-3.7 *Producer variables*: Some of these variables have been covered elsewhere and others are irrelevant or likely to be unimportant. In brief, the breakdown is as follows.

3.1. The student's active linguistic competence is covered by the first dimension of language testing (9.1.). But does the test also make demands on his communicative competence in responding to stimuli?

3.2. *Familiarity with context*: Largely covered by the corresponding stimulus variable, which usually determines the context. A very open stimulus, however, such as 'Tell me the plot of the last movie you saw' may leave the context up to the student, in which case this variable becomes relevant.

3.3. *Cognitive skills, imagination, and creativity*: Do the responses require the student to organize his presentation, or is that done for him by the test format? What study skills are involved over and above language and communicative competence in responding to stimuli?

3.4. *Ability to organize discourse*: In the testing situation, this variable may not be present at all, or it may be determined by factors in the preceding item (3.3) or the ones following (3.5 - 3.6). If the subject is required to create discourse, he must do so with enough coherence and redundancy so that correct inferences can be made by his hearers and readers.

3.5. *Communicative intent*: This factor is largely irrelevant in producing or selecting responses to stimuli. The reason is that there is no audience as such for the student to communicate with, merely an audience which is waiting to evaluate his linguistic or communicative performance in some way. In a face-to-face interview with a human examiner who is sincerely trying to interact with the examinee, however, this variable may become an important one.

3.6. *Attention, set, and motivation of speaker or writer*: These are determined by the stimuli, the general test format, and the audience variables. *Selection* of the proper response has already been treated (above) as a whole dimension in its own right.

3.7 *Familiarity with audience*: This factor may be quite relevant here, if we redefined the 'audience' as a judge or a panel of judges. The questions: Are the responses to be judged as either right or wrong (as in an 'objective' test) or is there some latitude in their evaluation (as in a 'subjective' test)? If the latter, does the student know who is going to do the evaluating -- will it be a teacher or an outside examiner? If the judge or judges are known *in advance* to the student, how well does he know this audience? Specifically, does he know what is likely to please or displease it?

3.8. *Self-monitoring and short-term memory*: This may be a very important producer variable, especially in speaking or writing under pressure. The basic question: Are the expected responses so long, and the time available for making them so short, that short-term memory and self-monitoring become crucial?

4.1.-4.3. *Production task variables*

4.1. No overt response expected (from the examiner or judges): This is not an important factor. Feedback from the examiner on the results of individual performance on a language test may be delayed, or even completely lacking, but it is always expected.

4.2. *Dialogue expected* (concerning the test). There are four different ways in which dialogue can be generated about test responses. The first applies to questions concerning the *test instructions*, and this type of dialogue must cease as soon as the test proper begins. But in some forms of language testing (for example, face-to-face oral interviews), subjects may ask the examiner about the form or content of stimuli before attempting to respond to them. A third way of generating dialogue occurs in forms of language and communication testing in which groups of examinees, rather than individuals, share the responsibility for producing or selecting responses; in such cases dialogue among them is expected and encouraged. Finally, if the test or examination is administered by a teacher, rather than by a central authority or international syndicate, the test subject can expect that his responses to stimuli will be discussed at a later date when the teacher goes over the test results.

4.3. Other overt response or feedback expected (from the examiner): This is the most important variable to be considered here. Does the student know what type of evaluation or marking system will be used to judge his responses? Does he know when he can expect to get this evaluation, and what its implications are for his future as a language and/or general student?

5.1.-5.3. *Audience variables* (See Section 8.6. the for numbering system.)

5.1. *Target definition*: In formal language testing, the student does not choose his audience -- that is, the judges who will evaluate his response. In the rare case where he does, the consideration would be the same as in variable 3.6 (above), and the student would be advised to choose a judge or judges whom he knows well.

5.2. *Choice of codes*: Is there included in the instructions for the test a specification of the particular code, within the general language type, in which the responses are to be encoded? Is there more than one code specified or implied by the test? If there are no instructions, is the student expected to take his cue from the code of the stimuli, or is he supposed to aim consistently at the socially most prestigious and standard variety of the language type concerned?

5.3. *Pragmatics*: To what extent does the student have the opportunity during the test to play on the emotions, convince, bluff, or delude his audience as well as to inform it? Or is pragmatics irrelevant, except as provided for in a particular stimulus?

This bundle of dimensions, covering the other aspects of the response, concludes the taxonomy of language testing presented in the preceding four sections. The technical aspects of marking and scoring language tests, of course, constitute an additional dimension which might be considered, but it is not a particularly relevant one in terms of our central concerns. As long as the examinee understands the instructions and has some idea of what is expected of him in the way of responses, the method of scoring or grading the test should reflect this understanding in some way. Obviously, this is not always the case -- for example, marking procedures can be changed after the fact, in order to produce a more desirable distributional curve, to 'pass' or 'fail' a larger number of students, or for other similar reasons. But this is not a dimension peculiar to language testing.

We can now proceed to look at language tests from the point of view of possible uses of results (9.1., end). The four main categories are aptitude, achievement, diagnostic, and proficiency testing.

9.5. Aptitude testing

Language aptitude tests provide the kind of information about individual learners and groups of learners which is useful in making predictions. Among the things that (hopefully) can be predicted are the following:

(a) Success in language acquisition and language learning generally;

(b) Prospects for learning or acquiring a specific language medium, or any one of a group of related languages;

(c) Success in following a particular instructional sequence, either in language curriculum or in general curriculum.

Unless the (a) type of prediction is involved, the assumption is always made that the prospective learner has no proficiency at all in the language media to be acquired; otherwise, a proficiency or diagnostic test would do the job better.

Because of the nature of language aptitude tests, the results are often compared with other psychological and educational measures: for example, intelligence tests and measures of cognitive development. Although a high positive correlation is often found between language aptitude and general intelligence, such correlations are not so high that it becomes a waste of time to develop and administer language aptitude tests for the purposes mentioned above.

In at least one known case, the results of language aptitude testing (of the most general kind) have been used in a negative way: to excuse students from a school language curriculum requirement, on the grounds that low aptitude is not the student's fault, and it cannot effectively be counteracted by good motivation, well-planned instruction, and hard work, in any case. Usually, however, general language aptitude test results are used in a more positive way, both in the making of decisions about school programs and in certain kinds of educational and psycholinguistic research. As predictors of success in language learning and acquisition, in fact, the better-known language aptitude tests have a record of considerable distinction.

One kind of application of the results is the identification of high-aptitude candidates for admission to voluntary courses of instruction in languages which are considered difficult to learn. Decisions about admission to such courses can easily affect the quality of instruction and the progress of all the learners -- if slow learners are admitted along with their more able peers, and if the class is too small to permit effective grouping and streaming, the instructor will have no recourse but to strike a happy medium, and the slow learners may still attain a less than satisfactory degree of achievement.

Such decisions about admission to difficult language courses become even more important when the applicants are not paying for the tuition themselves and the costs have to be watched closely. For example, aptitude tests have been administered to candidates for 'hard' languages at the Foreign Service Institute, U.S. Department of State, prior to admission to courses in languages such as Japanese, Chinese, Russian, and Arabic, where the training is at government expense. Either a general or a language-specific aptitude test can be chosen for such purposes, with the latter being slightly better at predicting success when the test is available in the required media combinations. (See below.)

A second positive use of aptitude testing results is to help administrators decide which potential learners should be given a course of instruction in a new language that a whole group of learners must somehow learn or acquire, and which learners may be expected to 'pick the language up' without instruction. This is also usually a cost-conscious decision. A variation on this use of aptitude testing occurs when the group of learners is being sent to several different countries. For example, a group of Peace Corps volunteers all having the same technical qualifications are being sent to various countries, all at the same time. The decision as to which volunteers should go to which countries may depend in part on the urgency and difficulty of their language-learning tasks after they have arrived at their destinations. The administrators can then administer a general language aptitude test to the whole group of volunteers, even if no language training prior to assignment is planned.

A feature of language aptitude testing which is not found in any other kind of testing has to do with the medium of the *stimuli*. As we have seen (5.2.), test stimuli, like responses and test instructions, can be either in the target language or in the subject's own language. In a test of general language aptitude, however, in order to avoid turning the test into a proficiency test, the stimuli must all be in a language medium (or media) which the prospective test population knows *nothing* about, or which all members are equally familiar with. In other words, there is no target language as such, but for testing purposes samples of unfamiliar language(s) must be introduced as stimuli. Language media so employed are often the less-known natural languages of the world, such as Kurdish, or even artificial languages which have been created expressly for the purpose. Occasionally, subjects are also expected to produce responses in the unknown language media too.

The language medium that the test population is assumed to know best is not only a possible medium for stimuli and responses, but is also the medium of test instructions, as in most other categories of general testing and measurement. This means that, for both general language aptitude tests and for those aimed at a specific language type, a *separate version* has to developed in each language medium for which there is a potential test population. In other words, a Slavic language aptitude test developed for speakers of English cannot be directly administered to a group of German speakers; at the very least, the instructions must be translated into German, and other changes may have to be made as well. A general language aptitude test that contains examples of Kurdish obviously cannot be administered to Kurds, because the items are designed on the specific assumption that they are in a medium unknown to the test subject, and so on.

Given the many purposes for which language aptitude tests can be developed and administered, one would expect to find many examples of them in the fields of language education and language planning. This is not the case, however. The fact is that valid and reliable aptitude testing instruments are more difficult, time-consuming, and costly to develop than are their counterparts in achievement and proficiency testing. Their uses, moreover, are not well understood by educational planners, general curriculum developers, and even some language program developers. The result is that only a few tests of general language aptitude (for example, Carroll, Pimsleur) are available in more than one language-medium adaptation today. And only a few, less standardized, efforts to develop similar instruments for testing aptitude with relation to certain languages or language groups have actually been attempted.

The scarcity of standardized instruments for measuring language aptitude, however, should not prevent language program planners and curriculum developers from applying the *concept* of aptitude measurement to various problems of learner selection and program development. It should not prevent them from designing their own (sometimes necessarily crude) instruments for such purposes. For example, when it is known that a specific instructional sequence is to be offered in a new language medium, an effective shortcut for testing the aptitude of the prospective learners (of any language background) and for predicting their success in learning the whole sequence, is simply to expose them to an early sample lesson. Depending on the range of language aptitude within the group of learners, as deduced from this trial, some may need language instruction and others may not.

Existing standardized language aptitude tests make use of all types of test content: discrete items, separate language skills, and integrative performance. If the stimulus medium is an artificial language, the forms of this language can be shaped exactly to the purposes of extracting the information that is wanted. If the stimulus medium is a little-known natural language, the medium chosen for a particular set of stimuli can be chosen for its special characteristics -- unusual phonetic features, complex syntactic and morphological structures, richness of vocabulary in certain areas, complex social levels, or even regularity of form, and so forth. Examples of real and hypothetical types of language aptitude test items, designed to get at the type of information that language analysis provides, are given below. The examples are presented under the three most common headings.

Discrete Points

Phonology:	Perception of tone differences Syllabification Perception of unusual vowel and consonant differences
Morphology:	Isolating a suffix or prefix and reconstructing its forms and functions
Syntax:	Constructing a sentence by analogy with other sentences, with vocabulary provided
Lexis:	Predicting the meaning of new lexical items, such as compounds or derivatives, from the meanings of constituents

Separate Language Skills

Short-term Memory:	Repeating a short sentence in an unfamiliar language Copying a briefly-displayed orthographic sequence
Literacy:	Predicting the spelling or pronunciation of unfamiliar words after some exposure to the mechanics involved
Inferring Ability:	Predicting the meaning of unfamiliar words in a familiar context
Organizing Ability:	Ordering constituents of known meaning to produce a particular pragmatic effect

Participating in discourse in the unfamiliar language in a limited way -- for example, by answering a question after a sufficient number of question-answer examples have been given.

Mastering a language learning mini-sequence.

9.6. Achievement testing

Most of the language tests given throughout the world and taken by students in schools are, whether so designated or not, achievement tests. These tests have the common characteristic of measuring the degree to which students have learned what it was intended for them to learn in the whole of any instructional sequence or in any part thereof, and of determining whether they have met various criteria specified by a language syllabus, or the various objectives of language curriculum. The teaching/learning period covered by an achievement test, therefore, can be anything from a few minutes of classroom work or self-instruction up to an entire 12- or 13-year cumulative program of primary and secondary school language instruction. But there is always some such period of teaching/learning activity involved, and this sets achievement testing apart from the other three types of language testing. In aptitude, diagnostic, and proficiency testing, no specific instructional sequence is necessarily involved in the purposes of testing, and the uses to which the test results are put need not have anything to do with language instruction as such.

Several useful distinctions can be made in a general typology of achievement tests. The first distinction is this: Is the test designed to measure the progress of students in learning the elements of the language instruction as presented to them (for example, according to a syllabus, a set of lesson plans or self-instructional materials)? Or is it designed to assess their achievement in language curriculum itself -- that is, to measure the degree to which they have met the general aims and specific objectives of language learning as laid down by the highest relevant school authority? The question can also be phrased this way: Is the achievement test based on what was actually taught, or on what should have been taught?

As we have seen (in Chapter 4), the aims of language curriculum and language instruction are often in conflict, so that the design of a specific language achievement test can put the teacher or the school program coordinator in a real quandary. In general, tests of achievement in language curriculum tend to be far less frequently administered, but more rigorously proctored and scored, and more standardized than other types of achievement tests, such as those which are designed and administered by individual teachers for their own purposes, or required by local school authorities.

A second distinction can be made according to the degree of sampling, and method of sampling, of instructional materials or curriculum materials represented in the test. All achievement tests should, at least in theory, involve sampling the content of the language syllabus or of actual instruction. If all the material for a given instructional sequence, or every type of example specified or implied by some part of the syllabus, is included in a test, then the result either becomes a sort of diagnostic test (see next section) or else the testing procedure becomes indistinguishable from the teaching/learning process itself. Sampling, therefore, is always necessary. If exercises and drills form part of the instructional program, for example, not all of them will recur on the corresponding achievement test.

If the sampling is done on a random basis, the results of the test will be more useful for normative purposes -- that is, distinguishing the good students from the bad -- and the larger the sample, the more normal the distribution curve of scores is likely to be. If the sampling is done on a selective basis, by including in the test only items which are thought to be the most important, in terms of the instructional sequence, or the most summative, in terms of the syllabus sequence, then the achievement test tends to become criterion-referenced. If so, the results will be useful in a number of different ways. The larger the sample, the greater the number of criteria that will be tested, but the distribution of scores may be highly skewed.

This leads to a third classification of achievement tests: according to the purposes of the test, or rather according to the various uses to which the information from the test results can be applied. The most important uses are the following.

(a) To pass, fail, or otherwise grade students in specific language courses (or to warn them of impending failure)

(b) To stream students into different language classes or sections according to prior achievement in the language concerned (rather than according to their general proficiency in it)

(c) To qualify or select students for further progression in a planned sequence (e.g. programmed instruction) or for further voluntary learning in the language concerned

(d) To qualify or select certain students for admission to general curriculum subjects taught in the language tested, or to certain professional fields

(e) To evaluate the performance of language teachers in terms of their control of the content to be taught (rather than in terms of their general proficiency in the language)

(f) To evaluate the effectiveness of instructional materials

(g) To evaluate certain methods of teaching or models of learning (regardless of who teaches or supervises the instruction)

(h) To evaluate the entire language program of a school or school system (for example, with a view to making changes in the program, continuing it unchanged, or discontinuing it)

(i) To compare the results of achievement tests with other data on the student population, for educational research purposes

(j) To use the results in connection with linguistic, psycholinguistic, or sociolinguistic experimental research.

As mentioned earlier, achievement tests are sometimes conducted for purposes other than these, and sometimes no use whatever is made of the results. But potentially, at least, the results of all kinds of achievement tests can be, and have been, applied to all of these purposes. Such applications are possible no matter whether the test was based on language instruction or on language curriculum objectives, whether it was criterion-referenced or norm-referenced, and regardless of the degree and method of sampling involved in the selection or construction of test items. The suitability of the test results for these various purposes will naturally depend, however, on these other factors in their design, as well as on the degree of subjectivity and methods of scoring.

In terms of their technical construction, achievement tests are also the most universal among language tests. Discrete-point, separate language skills, and integrative approaches are all common. In addition, the rarer combinations of stimulus and response variables (9.2. - 9.4.) are more likely to be found in achievement testing than anywhere else. In a pinch, achievement tests can substitute for aptitude or diagnostic tests (but not for genuine proficiency tests -- see 9.8.).

9.7. **Diagnostic testing**

While achievement tests look at the past performance of students, and aptitude tests attempt to predict their future performance, diagnostic tests essentially look in both directions at once. The central application of the results of all diagnostic testing is to the identification of strong or weak points in students' overall language proficiency or their achievement in a specific instructional sequence, with a view to modifying future instruction so as to capitalize on the strengths and remedy the weaknesses. In most cases, it is *channel distance* (4.3.) that is measured.

Thus, diagnosis can be performed on individual students, on groups, cohorts, on classes of students, or on the populations of whole schools and school systems. The actual testing instruments used for diagnostic purposes can be existing aptitude, achievement, or proficiency tests, or tests designed to probe specific areas of language or language use. In the latter case, the tests do not have to be standardized: Reliability is not a vital concern, and face or content validity can easily be established through the specific purposes of the diagnosis. The areas to be probed may be discrete points of pronunciation (and spelling), vocabulary, and grammar, or separate language skills, or integrative performance in terms of some important topic area (e.g. commerce) or in terms of certain study skills (e.g. summarizing).

The essential differences between diagnostic testing and the other categories of language testing can also be shown by comparing the assumption underlying each type of test. The diagnostic test proper, whatever the original purpose of its development, assumes some degree of proficiency in the target language (unlike the aptitude test). This proficiency, however, is thought to be deficient in some respect (the true proficiency test does not make this assumption). And if instructional sequences are involved, both past and future sequences are relevant (not necessarily the case with achievement tests). A test which is specifically designed for diagnostic purposes, therefore, is always potentially a better test for these purposes than some other, similar test which may be adapted because of its ready-made characteristics (or because standardized tests are always thought to be superior to other tests).

These observations lead, however, to what might be called the central paradox of diagnostic testing -- a paradox which has been noted by many experts on language testing. The more relevant a diagnostic test is to the design of a particular instructional sequence, and the more useful it might be in the treatment of individual students in the language program, the less likely the test is to be developed, to be administered, and to have its results used for decision making. The explanation for this paradox (which in no way helps to resolve it) is that the best applications of diagnostic testing often occur at the micro-level, with specific classes or other small groups of students as subjects, and that at this level teachers seldom have the time, or the know-how, to develop the necessary instruments.

When the diagnostic instruments are prepared in advance at a higher level (for example, by the school or school system), they tend immediately to become achievement, proficiency, or even aptitude tests, and they tend to be treated as such. Test developers at the higher levels are often not in a position to know what exactly needs to be diagnosed, in terms of linguistic and non-linguistic factors peculiar to each classroom situation and each teacher's style of teaching. As we have seen in this chapter, there are far too many variables in language proficiency, communicative competence, and the technical aspects of test construction for all of these variables to be built into a pre-packaged, all-purpose set of diagnostic tests. Even when the subject matter of a forthcoming instructional sequence, and the methods to be used in presenting it, are completely prescribed by the higher authority, the precise form of diagnostic instruments may still have to be determined at a lower level.

An example will perhaps help to illustrate this last point. Suppose that a teacher has begun the task of instructing her class in how to describe visual displays orally in Language X (see 6.1.). The pupils, from the start, have great difficulty in performing this kind of communicative act, which combines language skills with study skills. The teacher finds that they cannot describe even such simple objects as their national flag -- a thoroughly familiar visual object. It then becomes desirable to find the causes of these difficulties -- that is, to diagnose the factors leading to poor performance by the pupils. An item analysis of achievement tests for the previous sequence of language instruction will probably not shed much light on the problem, and the scores on such tests will certainly not. When the students actually try to describe the flag, their oral production may be so scanty that error analysis of their descriptions is not much help either. Let us consider some possible sources of the oral production failure.

(1) *Vocabulary gaps:* For example, the Language X words for the colors of the flag, prepositions such as 'above, below, up and down, across, behind, in front of, between', nouns such as 'background, corner, stripe, band, star, circle, half-moon', and descriptors such as 'right, left, vertical, horizontal, diagonal, opposite' and so forth.

(2) *Structural gaps:* For example, how to express in Language X the notions of 'longer than, not as bright as, the thinnest, further to the left than, it runs across, it is encircled by (there is a circle around it), it is obscured by', and so forth.

(3) *Skill gaps:* For example, inability to speak creatively without first writing down the text in the unfamiliar language, or being prompted with questions such as 'What color is the stripe?' 'How many stars are there in each row?' 'Which way does the half-moon face?' and so on.

(4) *Conceptual gaps:* For example, lack of experience in description of this sort in any language, including the home language.

All of these four potential areas of difficulty can easily be probed by diagnostic tests (not all of them language tests as such), and of course objects other than the national flag can be selected for description, in order to broaden the scope of the tests. The first two areas above can be explored with discrete-point tests of vocabulary, morphology, and syntax. The third area can be tested by setting a similar task of description from notes or teacher's questions or cue-words, or by setting a different task which does not involve a visual display. The fourth area, conceptual gaps, can be probed by having representative students perform the descriptive task in their own best language, and so on.

The kinds of diagnostic tests we have proposed in this example, of course, could be prepared at a higher level of curriculum development and simply made available to the teacher to use as she chose. A well-designed language program, in fact, should include such diagnostic tests, generalized to cover as many local conditions as possible.

But even so, without knowing what particular objects each teacher in the program has available in her classroom for the descriptive task, this might prove difficult to do. On the other hand, if every teacher in every classroom is obliged to use exactly the same objects for description, at a certain stage of the Language X instructional sequence prescribed for a whole school system, the chances are less that diagnostic tests will be needed. In a rigid program of this sort, the designers will probably have anticipated the difficulties, and the areas to be diagnosed will have been built into prior sequences of language instruction, so that an item analysis of previous achievement tests will do the same job.

One of the most important uses of diagnostic testing occurs in connection with error analysis (8.7.). In our example above, the teacher was initially confronted with too many gaps in student oral production to make any effective use of error analysis, and that was why diagnostic testing was indicated. But suppose the students, in attempting to describe the national flag, were producing relatively fluent oral texts which were merely full of confusing or misleading errors. By noting the most common patterns in these imperfect student products, the teacher could, whenever the linguistic source of the error type was not already obvious, determine its source by devising on the spot a simple diagnostic test. This would show, at least, whether the error was syntactic or lexical in nature, and whether the defect was semantic or phonological in terms of its probable source. If the discrete points involved had not been sufficiently learned in previous instructional sequences, correction and/or remedial work could proceed accordingly.

Earlier in this section, mention was made of the function of diagnostic testing in designing or redesigning new instructional programs for whole schools and school systems. This is a very important use of diagnostic testing on a mass basis, and one in which the substitution of an existing proficiency or achievement test will not always elicit the desired information. For example, suppose that a change in language policy of Country X calls for upper secondary school students to study science in English instead of in Language X as before. Because of deficiencies in

English of some of the students, it is decided to have a special course called English for Science.

In the needs assessment leading to the design of this course, the designers cannot use a general proficiency or achievement test of English. The students study all their other subjects in Language X, and the only English that is relevant to their needs is the English that occurs in science textbooks, communication in laboratories, and so on, but this was not the emphasis of their previous language instruction. They will have learned some of the content of the proposed English for Science course accidentally, of course, but nobody knows exactly what or how much. Diagnostic testing, therefore, is the best way to get this information.

In case only passive skills in scientific English are required, a skills-oriented diagnostic test of reading or understanding is indicated. If the active skills are also required, or if translation or interpreting from English into Language X is involved, an integrative skills test would be a better choice. The latter would inevitably resemble a standard English proficiency test in many respects, but there would be a big difference: The test *content* would be based on a text analysis of authentic oral and written samples of scientific English to which the students were going to be exposed later; it would not include, for example, how to order a meal in a restaurant or introduce a new acquaintance. If so, it would represent a true diagnostic test, the information from which could be used in the design of the new course.

Earlier mention was also made of the possibility of conducting diagnostic tests without reference to a particular instructional sequence. Our examples thus far have revolved around future language teaching approaches and future curriculum development. But suppose that the diagnostic test just described (for prospective students of English for Science) were administered, and all students got very high scores. This outcome would mean that the proposed new course should probably be scrapped, and the problem could be solved by including some of the needs of science students (those revealed by item analysis) in general language instruction at a lower level. Even if only a certain percentage of students scored high on the diagnostic test, these students could be excused from taking the special course, and so on.

Whatever the outcome of the diagnostic test just described, it should be administered not only to prospective students of the English for Science course, but also to two other groups: (a) language teachers who are to give the instruction in the special course, and (b) science teachers who are now going to teach in English instead of in Language X. If the language teachers themselves do not perform well on the diagnostic test, and no other teachers can be located, then the new course may have to be scrapped anyway. And if the science teachers (some or all of whom may never have taught science in English before) do not perform well on the test, then the proposed policy of switching media for the teaching of science should certainly be re-examined.

Thus diagnostic testing has some of the same uses as aptitude testing (9.5.), in the sense that the results can be useful in making policy decisions as well as engineering decisions (see also Chapter 11). It resembles proficiency testing, in the sense that it may probe areas of language and language use which have not necessarily been taught before and which the test subjects may or may not have had the opportunity to acquire otherwise. The parallel between diagnostic and achievement testing, of course, is that both types of language testing are aimed at locating deficiencies in the past language experience of the subjects. Diagnostic tests can, in fact, substitute for achievements tests in all except the first use listed for the latter (9.6.) -- the passing, failing, or grading of language students.

In summary, insofar as they focus on purely linguistic performance, diagnostic tests attempt to measure *channel distance* of some kind (4.3.), and are therefore closely associated with both text analysis and error analysis. But diagnostic testing can also be aimed at identifying strengths and weaknesses in study skills (e.g. describing visual displays, summarizing, translating) and in the experience of learners with respect to content areas (e.g. commerce, science). In this sense, diagnostic testing overlaps with other forms of educational measurement.

9.8. Proficiency testing

All language proficiency testing is aimed at measuring what we have called (5.8., end) *proficiency distance*, represented by the basic formula XPn- XPp. There is not much new to be said about the linguistic and technical parameters of proficiency testing that has not already been covered in the last five chapters. This occasion will be used for summarizing the main points supporting the concept of proficiency testing and for commenting on some of its implications and applications.

Proficiency in at least one language is acquired by every normal human being -- that is, by everyone who is free of mental and physical handicaps which prevent such acquisition. In schools, language proficiency can be acquired without conscious effort on the part of the student toward the particular goal, and proficiency distances can be narrowed independently of language instruction and curriculum, and even (if the language concerned is not one of the school languages) independently of general instruction and curriculum. Thus language proficiency is by no means necessarily a product of formal language teaching and learning, although all language instruction has the aim of increasing some aspect of it, and all language curriculum implies the same aim. (Failure of school administrators to understand, or to accept, the proposition embodied in the last sentence can have very deep consequences.)

In our terms (5.8.), language proficiency is the ability (or competence) to produce, react to, and participate in the production of, oral and written texts of all kinds in a single, pre-defined language variety, as measured by comparison of actual performance with equivalent performance of educated native speakers of the same language variety with respect to the same texts. In order to demonstrate language proficiency, then, a person must be able to speak, understand spoken language, read, and write, because 'participation in texts' requires all of these skills in addition to the ability to handle the non-verbal channel uses that form part of every text. This implies, in turn, that the four basic skills involved in language proficiency can be tested in some way and compared with the skills of the ideal educated native speaker.

As we have seen earlier in this chapter (9.2.-9.4.), any practical test of performance in speaking and writing involves a stimulus (which must be interpreted somehow, even if it is a non-verbal one) as well as an active response. Any test of competence in understanding spoken language and reading (there is no 'performance' involved here) likewise involves the production or selection of a response of some kind, in addition to passive language processing. Hence the four basic skills cannot really be tested separately, except at a very rudimentary level where a non-verbal stimulus or response can be employed. And even at this level, the subject must be able to understand the test instructions, which must be delivered to him verbally in some language medium.

Yet this mingling of the skills, in all types of language testing, can be justified by our subsequent analysis of language proficiency into components which reformulate the distinction among the skills (8.8.). We repeat the relevant equations here, leaving out the value XM (the relative difficulty of the mechanics of the X writing system). XM can be omitted because we are not measuring channel distance here, and XM is a constant in any test of proficiency that involves reading or writing Language X.

Speaking: XSp = XPp (basic language proficiency)
Understanding: XUp = XPp + XIp (plus inferencing)
Skills: Writing: XWp = XPp + XLp (plus literacy)
Reading: XRp = XPp + XIp + XLp (plus both)

The implication of these modified equations, of course, is that speaking is the most basic of all skills. Not only our intuition, but also the possibilities of informal assessment of language performance confirm this. If, instead of administering a formal test of speaking, we were to follow the subject around during all his waking moments for a few months and record everything he said in Language

X, with or without an audience and with or without a contextual stimulus, we could make an assessment of his speaking proficiency in X (XSp) on that basis alone. (Certain studies of child language learning have accomplished exactly this.)

We could not make the same kind of assessment for any other skill. Even the assessment of writing proficiency requires that the subject be literate -- that is, that he knows the mechanics of one written language to some extent. A complete inventory of the subject's written products over a period of time could be analyzed, of course, but an assessment could not be made without taking his knowledge of mechanics into consideration. Similarly, any assessment of the passive skills which was based entirely on non-verbal responses to verbal stimuli would be incomplete, because behavioral responses tell us very little, and there may often be no audible or visible response whatever to record even though the subject has understood or successfully read some verbal stimulus. The most significant type of information to be obtained in the assessment of passive language competence may emerge only in the form of the verbal production -- that is, the subject's own speech and writing acts.

Now comes still another paradox. Although speaking is the most basic skill, both in terms of informal assessment and in terms of our equations, it is the most difficult skill to measure *objectively*, from the point of view of proficiency testing. We cannot really follow all our test subjects around, 16 hours a day, and it is often uneconomic even to provide our subjects with an interviewer or sit them down at a tape recorder for a sufficient length of time to get a true picture of their typical speaking performance. Even when we can interview them or provide them with a set of instructions for what to say into the microphone (for example, to narrate a videotaped sequence), we are already introducing verbal comprehension elements into the testing situation: comprehension of the stimuli, or of the task. Since we are trying to test the most basic skill of speaking independently of the other skills, moreover, the potential distortion here is greater than for comparable tests of reading, listening, or writing.

Fortunately, there are other ways of getting at basic language proficiency (XPp) besides directly testing the ability to speak, provided our equations are correct. One way is to start with the most complex skill, reading, and strip away the values for the component skills one by one until we are left with proficiency itself. In terms of our equations:

$$XRp = XPp + XIp + XLp$$

$$XPp - XRp - XIp - XLp$$

This explains, in passing, why so many standardized tests of language proficiency contain items or sections in which the subject is required to read. It would be theoretically desirable, of course, to start with understanding competence ($XUp = XPp + XIp$), but for largely technical reasons it is more difficult to isolate inferencing ability (XIp) through oral stimuli than it is to isolate it through written stimuli.

Since a great deal of research and development has been done on the testing of reading comprehension (in English and many other languages as well), the establishment of a reliable value for the reading competence of a given subject in a standard written language at a given time (the value of XRp) is not too difficult. Administering a single test of reading comprehension, no matter how standardized, will not accomplish this, however. Through the application of text analysis (7.7.) to the reading passages selected, and by giving enough reading tests of various levels of difficulty, we can eventually factor out everything but the linguistic aspects of reading and establish a *reading level* (7.8.) which will be to all intents and purposes the equivalent of XRp, or at least as close as we can get to an actual measure of XRp. The next step will be to factor out (or, in terms of our equations, to 'subtract') the value for inferring ability (XIp).

If our Language X happens to be English, or one of the other better-known languages in which the relevant research has already been conducted, we can use a *cloze test* for the purpose of factoring out inferencing ability. In a standard written cloze test, the subject applies missing words in blanks spaced at regular intervals -- every fifth, seventh, or tenth word, for example. It is important to note that the words deleted are selected in *random* fashion, not selected for deletion on some other principle that the examiner has in mind. In this sense the cloze test (oral or written) replicates channel use in real communication events: Words in written texts can be smeared, partly illegible, completely blacked out, or simply missing, just as words in oral texts can be obliterated by sudden loud noises or other forms of channel interference. The particular places where channel noise or text loss will occur, moreover, are unpredictable in terms of text content. In other words, the loss is linguistically random, like the deletions in a cloze test, and inferring ability becomes crucial.

The standard written cloze test, however, obviously involves a productive skill (XWp) as well as inferencing ability (XIp). Since the basic language proficiency we are trying to measure is also equivalent to a productive skill (XSp), the cloze test will have to be modified in order to make responses *selective* rather than truly productive. This is easily done by providing options (multiple choices) for each blank to be filled. For example:

Standard Cloze: The man took out his ______and paid the cashier.

Modified Cloze: The man took out his ______and paid the cashier.

(a) gun (b) wife (c) wallet (d) immediately
(e) commission

(The test item in a real cloze test of either type would include more context than this.) The correct answer to both items is 'wallet', but in the standard cloze test the subject must select this word from the entire lexicon of English, while in the modified version he only has to identify the correct answer from among five options.

If enough tests to establish reading levels, and enough modified cloze tests based on passages of comparable linguistic difficulty are administered to the same subjects, a measure of inferring ability (XIp) can eventually be isolated. (The statistical and mathematical operations involved in doing this are too complex to be discussed here.) Any value for XIp thus obtained can subsequently be checked through various similar oral tests, in which literacy (XLp) is not a factor. The value for XLp itself is relatively easy to establish, through dictation and reading-aloud tests that are scored objectively. (It should be noted, however, that dictation and reading aloud also involve the ability to make inferences from context, in many languages -- see Chapter 7. In such cases, XIp must again be factored out statistically in establishing the value XLp.)

After the necessary skills-oriented tests have been administered and the results analyzed, the application of the equation

$$XPp = XRp - XIp - XLp$$

will eventually give us a value for an individual subject's basic language proficiency. This value then can be subtracted from whatever ideal value we posit to represent the proficiency of the 'educated native speaker', if desired, to give us a concrete measure of proficiency distance (see 5.8.):

$$XPn - XPp = \text{distance for pupil } p \text{ in Language } X.$$

The same value, XPp, likewise can become a term in any formula of actual channel distance (4.3.), literacy distance (7.5.) or active/passive distance (8.8.), in measuring the separate skills of the same pupil.

The procedure just described is, of course, not the only way of measuring language proficiency. Most standardized language proficiency tests, such as the numerous international tests of English as a foreign language, are in fact *test batteries*, which measure various skills and components separately and may include both discrete-point and integrative approaches (see 9.1., end). Some well-known tests of English, such as the 'Davies Test' administered to students seeking to further their studies in the United Kingdom, include both objectively-scored and subjectively-scored components. Others, such as the

American Test of English as a Foreign Language (TOEFL), are entirely 'objective' -- that is, in terms of scoring, not in terms of item selection.

The measures provided by such test batteries, however, are seldom single measures of what might be called language proficiency, but rather measures of separate elements of proficiency which can be added together in various combinations, subtracted, or simply totalled, according to what the user of the test results thinks is relevant. The separate scores are seldom equivalent, by any interpretation, to values for the factors we have isolated in our analysis: namely, basic proficiency (XPp), literacy (XLp), and inferring ability (XIp). The reason for this is that standardized proficiency tests of international languages, such as the American TOEFL and the British Davies Tests, cannot use shortcut methods such as we have suggested for the measurement of language proficiency. Because of the constraints inherent in mass testing -- comparability of administration and equipment, security considerations, computerized scoring and analysis, and so on -- all of the responses and most of the stimuli in such tests must be in written form, and really productive responses (interviews, essays, and even cloze tests) are often effectively ruled out. This means that the test developer cannot factor out literacy and inferring ability in the way we have done above, because the whole proficiency test must be administered in one sitting and examinees cannot be screened in advance, or recalled for further testing.

The solution, in the case of tests like TOEFL, is to present a whole battery of sub-tests aimed at getting information about separate skills such as listening and reading and getting at the active skills through discrete points of grammar and vocabulary, using mainly multiple-choice techniques whereby the test subject does not respond verbally, but merely blacks in a slot opposite the correct answer. Whenever international proficiency tests can be administered by surrogates of the test developer, as is often the case with the British Davies Test, the American Michigan and ALIGU Tests, and the Australian government's test of English for immigrants, it is possible to add interviews, essays, and other sub-tests which require not only subjective scoring but also actual language production tasks for the examinees.

Regardless of how a given proficiency test is developed and administered, the main uses to which proficiency tests results can be put are the following:

(a) All of the uses of diagnostic test results (9.7.)

(b) All of the uses of achievement tests results (9.6.), except passing, failing, and grading students in a specific language course or program

(c) Uses in conjunction with aptitude testing (9.5.) when it is not certain that the students being tested for aptitude are fully proficient in the test medium (a proficiency test cannot replace the aptitude test itself, however)

(d) All of the other purposes not included or excluded above (9.1.) -- for example, to establish the language qualifications of a candidate for employment.

To sum up, proficiency testing is the most general kind of language testing there is. Proficiency tests are essentially one-time descriptive measures, looking neither backward at the student's past history nor forward to his future prospects, but directly at his present competence in the language (his interlanguage) as evidenced by his performance at the time of the test. But the results of the test can still be used to look forward or backward if one wants to use them that way. Potentially, every type of linguistic content analysis, medium of stimulus, and response and the other dimensions of testing are made use of, and the results of proficiency testing can substitute for most of the purposes for which other categories of tests are designed. Finally, this is the category of test which, if properly designed, is least likely to test non-linguistic factors in the student's ability to use a given language.

CHAPTER 10

LANGUAGE INSTRUCTION

10.1. The translation method
10.2. Grammar and explanation
10.3. The audiolingual method
10.4. The situational method
10.5. Communication tasks
10.6. The functional/notional approach
10.7. Discovery-oriented approaches
10.8. Language for special purposes

All of the channels and media of language testing which were noted in the previous chapter (9.2. - 9.4.) are also available for language instruction sequences; only the purposes of such channel and media uses are different. Language teaching methodologies or recommended learning strategies may involve the use of non-verbal channels and the student's own language (O) as well as use of the target language (T). The T or O stimuli used for classroom exercises and assigned homework have exactly the same range of variables as the stimuli used in language testing; the T or O responses expected of the student in the classroom or on assignments have exactly the same range of variables as the responses expected on an informal test or a national examination.

In this sense, the distinction between language testing and language instruction is really more a quantitative than a qualitative one: Testing nearly always involves sampling some kind of language syllabus (9.6., 9.7.), some kind of language proficiency (9.8., 9.7.), or some kind of language-related aptitude (9.5.), while language instruction attempts to present the content of a language syllabus, build up overall proficiency in the T language, or increase the capacity of the learner to acquire any new language, and it attempts to do this in some kind of ordered fashion, insofar as time, instructional resources, and other pedagogical constraints permit.

The nature of the language syllabus itself will be discussed in the next chapter (11.3. - 11.4.). It is worth noting here, however, that the specification of a language syllabus may require, among other things, consideration of the same channel and media variables as are relevant to language testing and instruction. The important difference is that such a language syllabus specification (for example, one that follows functional/notional lines) *neither requires nor precludes* that the corresponding instructional sequences be modelled along the same lines as the syllabus specification. The only requirement is that the eventual outcome of the instruction, regardless of the methods and approaches actually used, is to be evaluated in terms of the syllabus, and not in terms of the methodology and materials employed by teachers in the program.

As we have already seen (1.8.), not even language curriculum can be considered to be the same as language instruction, because instruction must often take into account aims and objectives other than those which are implicit in the achievement tests and examinations which define the language curriculum. In the case where there is no language curriculum or specified language syllabus involved, language instruction may simply be an attempt to improve general language proficiency (or communicative competence) in some undefined and unmeasurable way. But even in this case, the models available for language instruction are no different from the usual models, and they all involve the same channel and media choices that are relevant to language testing and language syllabus design.

The present chapter proceeds from these assumptions in offering an overall taxonomy of possible language teaching methods and (school-managed) learning approaches. The different methods and approaches are presented in a roughly historical sequence which, in the case of the first six categories (10.1. - 10.6.), might also be said to represent a cyclical pattern. The taxonomy presented here, however, does not imply that two or more models of instruction cannot be present in the same instructional sequence -- in fact, mixed methodology (and mixed teaching/learning materials) are the rule rather than the exception in actual language programs in schools all over the world.

10.1. The translation method

Translation, usually from the target language (T) into the learner's own language (O) or some other language familiar to him, is probably the oldest form of organized language instruction. While the translation method is often combined with other methods, and particularly with grammar and explanation (10.2.), it is theoretically possible to use translation as the sole strategy of language instruction, either with a teacher or without, and it must therefore be considered as a 'method' in its own right. Very young language learners in bilingual families and societies, in fact, have been known to instruct themselves through trial translation as a supplement to their own acquisition of a new target language through direct experience. Practically all language teachers who have another language (O) in common with their students occasionally resort to translation in the classroom, as a supplement to other techniques, no matter what other methods of language instruction they have chosen or are obliged to use.

In the school context, of course, translation as a method presupposes control of the other language (O) by at least a majority of the learners concerned. Linguistically heterogeneous classes (4.8.) rule out the translation method, unless it can be applied separately to sub-groups within the class -- for example, through self-instructional materials in several different media, peer or team teaching, separate instruction by a multilingual teacher, or other classroom management strategies. In most applications of the translation method, however, the learner is expected to acquire general proficiency in the target language (T), or meet the specific criteria of a language syllabus expressed in translation terms, through the process of giving reasonable equivalents in his own language (O) of successively more difficult T specimens.

Language teachers, insofar as they teach, sequence, or monitor applications of the translation method, must of course be at least partially bilingual in Languages T and O (or partially multilingual if more than one student language must be dealt with). The teacher's proficiency in the languages concerned, however, need not be more extensive than is required by the particular oral or written texts which are specified for translation or interpretation. This consideration, in fact, is one of the big advantages of the translation method in many language instruction and curriculum situations. A school system which is obliged to offer Language T but has very few teachers who are really proficient in T, for example, can explicitly or implicitly recommend the translation method as a way out of the dilemma.

As we have seen earlier (5.1.), translating or interpreting from X to Y or from Y to X actually involves four different skills, depending on the channels of stimulus and response, as follows:

(1) 'Interpreting' XS → YS or YS → XS
(2) 'Translating' XW → YW or YW → XW
(3) (No name) XS → YW or YS → XW
(4) (No name) XW → YS or YW → XS

It often happens that one or more of these channel/media combinations are ruled out by the purposes of language instruction or by the language syllabus itself. For example, a given category of language learners may be required only to read silently and comprehend texts written in the target language (T) or perhaps never have to speak Language T or convert any written or oral texts in their own language (O) into T. In such cases the conversion task TW→OW (or TW→OS) applied to a sampling of certain prescribed texts will provide sufficient evidence that the students have in fact understood the content of all the prescribed TW texts. In other words, such conversion tasks can be used as achievement tests (96) for the syllabus or instructional program concerned. The teaching/learning strategies of the corresponding instructional sequences, of course, need not be confined to translation exercises, but if translation is the method selected, it means that *teachers* (as well as students) do not have to be especially proficient in speaking Language T or in converting samples of O to T.

More than that, a restriction of the channel/media combinations may make it possible to install a translation-oriented language program without any teachers at all. It is theoretically possible to design a self-instructional program which will gradually build up the skill of converting TW to OW, for example, even if the learners begin the program with no proficiency in Language T whatsoever. If the learners are fully proficient and literate in the medium of instruction (Language O), the self-instructional program can start with parallel OW and TW texts as models, and then "teach" by ringing syntactic and lexical changes in the TW text for students to convert into OW, and so forth. So long as the stimuli are rigidly controlled and the product required of the student is always a written one, the problem of monitoring responses (including self-monitoring) is easily solved without sophisticated hardware. (Only very advanced technology can monitor oral responses in this way, however.)

The disadvantages of the translation method (or of translation as an achievement testing technique, or of a translation-based syllabus) are less obvious, but are sufficiently well understood by modern language specialists to make translation a less desirable option nowadays for actual language instruction. For one thing, the ability to read and comprehend a target-language text, as exemplified in the preceding paragraph, is not the same as literacy in the target language (cf. 75). But the disadvantages of the translation method do not stop here. Besides the constraints already mentioned (classes must be linguistically homogeneous, teachers need to be partially bilingual in the right languages), it is now understood that successful translating and interpreting, like paraphrasing in the same language (cf. 68), involve as much art as science, and can be considered always to require study skills as well as linguistic skills. The products of translation, whether elicited from students by test stimuli, self-instructional stimuli, or teacher stimuli in the classroom, are very difficult to evaluate fairly unless the text content is highly factual and free of pragmatic and sociolinguistic complexity. To achieve communicative competence in a target language through the translation method alone, for example, is obviously a nearly impossible undertaking.

Tests based on a translation syllabus, on the other hand, are relatively simple to construct and administer. For this reason, such tests are widely used as shortcuts to the evaluation of language proficiency (e.g. as prescribed by the 'foreign language requirements' of university entrance, postgraduate programs, and certain job specifications), where language instruction is not necessarily involved. Such tests can also be used to measure achievement in specific language programs. But objective scoring of translation tests is difficult, for the reasons already given, and there is always the danger that the individual test subjects may not all be equally proficient in the response medium -- their 'own' language (O) -- or in the stimulus medium if the translation is in the the direction OW → TW or OS → TS. But written tests based on translation can be easily administered on a mass basis, and are therefore still very popular in some schools and school systems. Even mass tests based on interpreting tasks are feasible, provided student responses can be recorded on tape for later evaluation.

Since two language varieties are always involved in translating or interpreting, it might seem that the translation method can never be applied to 'first-language' instruction -- i.e. instruction in a language which is presumed to be familiar to the majority of pupils in a class. But this is not exactly the case. If the pupils in a 'first-language' class are mainly speakers of a dialect other than the standard variety of the target language, the general method may be quite applicable. Whether the tasks required of the pupils are actually translating, interpreting or paraphrasing is a question of the degree of language variety distance (4.3.) involved, but the principles of the translation method remain the same. (See also 6.8. and 10.8.)

The translation method of language instruction (or of language testing or of syllabus design) has close theoretical relationships with all kinds of linguistic analysis. Since two language varieties are always involved, however, *contrastive analysis* (11.7.) most often comes into play, and if the two varieties are genetically related to any degree *comparative grammar* (3.1.) is also involved.

10.2. Grammar and explanation

The teaching of familiar and unfamiliar languages through grammar and explanation of texts is probably nearly as old an approach as translation, and in the case of unfamiliar target languages it is often in fact associated with the translation method (10.1.). In this second type of approach, students are taught to talk *about* texts and analyze the target language, or text medium, in formal terms, rather than to use the target language for direct communication purposes. If the target language is no longer spoken, or if new written texts are no longer being created in it, as in the case of the typical classical language (2.5.), then grammar and explanation (with or without translation) often becomes the only workable approach to acquiring passive competence in the written form of a classical language. Hence, such languages as Classical Latin,. Greek, and Sanskrit have traditionally been taught through grammatical explanation and translation.

But quite apart from this use of grammar and explanation, elements of the same basic approach are very frequently found in the methodology, materials, and teacher training programs for *modern* language instruction, even when the basic approach is audiolingual, situational, or communicative. This is especially common in the case of printed materials for self-instruction (e.g. grammatical notes in textbooks) and .teachers' oral explanations and comments on particular texts. As in the case of the translation method, nearly every teacher at least occasionally resorts to informal applications of the approach in commenting on particular features of pronunciation, vocabulary, grammar, and discourse, as a supplement to other instructional techniques.

Unlike translation, however, grammar and explanation are not 'natural' components of language learning strategy. While very young children who are acquiring two languages, simultaneously or consecutively, may spontaneously engage in translating or interpreting, it is very rare for such children to indulge in overt speculation about the grammatical analysis of the language concerned. In first-language acquisition, likewise, children and adults can acquire impressive proficiency and communicative competence without ever being able to make a single coherent statement about the linguistic and communicative rules they are constantly following. Older second-language learners, however, and especially those with some linguistic sophistication, often can and do verbalize about the way a new target language works, or seek to compare a new system with an old one, even when grammar, explanation, and translation are not emphasized in the language instruction they are undergoing.

As in the case of the translation method, it is theoretically possible to make grammatical explanation the sole basis of language instruction. And indeed, grammatical analysis does sometimes occur as the sole basis of 'first-language' instruction, in cases where all students are assumed to be already more or less proficient and literate as far as *using* the language in question is concerned, and it is considered desirable for them to learn how to analyze and discuss the way the language works. There may even be good reasons for choosing this approach -- if, for example, the students are preparing to become language teachers, applied linguists, or general curriculum developers.

But more typically, the grammatical model used for explanatory purposes is a prescriptive rather than a descriptive one, and the aim of the 'first-language' instruction is to get students to modify their established speaking and writing habits toward approved norms, to 'learn how to think', or to improve their cognitive and study skills in some unspecified manner. In the usual case, therefore, the teaching of grammatical analysis to students who already have sufficient proficiency in the 'target' language cannot be considered as language instruction. It belongs, rather, to one of the other curriculum categories (see 5.4.) or to general acculturation and the development of study skills.

In teaching an unfamiliar target language, the grammar and explanation approach can likewise form the sole basis of language instruction. Since most 'second-language' learning requires considerable control of vocabulary as well as control of the grammatical and discourse structure of the target language, however, an explanatory method which does not also rely on translation as a process has to *supply* part of the translation through the instructional materials -- that is, all lexical items have to be glossed according to their meaning in a particular context. It is possible, for example, to discuss the grammatical relations of the linguistic items in the following Latin sentence:

Puer puellam spectat. 'The boy looks at the girl'

And it is theoretically possible to do this without knowing these glosses:

puer = 'boy' puella = 'girl' spectare = 'to look at'

But it is not possible to know what the Latin sentence *means* without either translating the whole sentence as a unit or supplying piecemeal equivalents of the constituents (including the inflectional endings). In practice, some form of actual translation nearly always goes side-by-side with grammatical analysis in teaching an unfamiliar language through this approach. What is to be taught through a grammar and explanation approach, what is to be learned according to the content of a language syllabus with this type of orientation, and what is to be tested in connection with a curriculum that emphasizes grammar and explanation is all presumably factual information, or at least content that can be cognitively acquired. No language skills, as such, are demanded of the learner, and the art of translation is not a primary factor in his successful achievement of the instructional goals. Hence tests based on grammar and explanation are among the easiest of all language tests to design, administer, and score; they can be completely 'objective'. In the classroom where the corresponding approach is being used, the learner acquires his explanatory proficiency by 'parsing', diagramming, or otherwise commenting on increasingly difficult samples of the target language, and by memorizing increasingly complex rules and sets of forms. During the achievement test or examination at the end of the course, he demonstrates this acquired proficiency by analyzing text samples, which may be in various channels but which are always presented in a single medium -- the target language itself. His responses, both in the classroom and on the examination, need not be in the target language medium, however (and very frequently, the student is never asked to respond in this way).

Thus the effective medium of instruction in a 'language' course of this type may, in fact, be a language other than the target language. In the usual case, it is the same language that is used as the medium of general curriculum. For this reason, language instruction based on grammar and explanation is not only easily assessed: It should also be easy to *program*. Given the factual nature of the content to be learned and the possibility of using a familiar medium of instruction throughout, self-instructional materials for the language learner who is already literate in the medium of instruction can be logically sequenced and presented with only a minimum of effort. If the materials are based on a contrastive analysis (11.7.) of the target language with the medium of instruction, such programmed sequences can be made highly effective. Even a prescriptive grammar of the target language can be so presented. This being the case, the question arises: Why are self-instructional, programmed materials so seldom developed and used, either as the sole means of instruction in language courses based on the grammar and explanation model, or as adjuncts to other approaches? There are several plausible answers to this question.

First, the current unfashionableness of grammar and explanation as a teaching or learning strategy has persuaded many language teachers, applied linguists, and curriculum developers that this strategy should be avoided at all costs (even as an adjunct to other basic methodologies). Since grammatical explanation happened to become unfashionable long before modern sophisticated techniques for programmed self-instruction became available, moreover, there are few good examples of actual self-instructional programs for teaching the grammar of specific target languages. Were this not so, such good examples might have served to convince skeptics that self-instructional grammars are sometimes worthy of consideration, at least as components of planned instructional sequences if not as the sole basis for them.

Second, available linguistic descriptions of a given target language may be incomplete, unsuitable, or even unprogrammable. Many national languages of the world today, for example, are undergoing standardization (of a prescriptive or natural kind -- see 2.8.), and grammars of such languages tend rapidly to become obsolete.* For certain other languages, some aspects of the grammar have been well described, but total descriptions are still lacking (e.g. Thai). Still other languages which are widely taught in schools have never been adequately described from a descriptive point of view -- for example, those languages for which traditional (often historical) grammatical treatments do not fit the facts very well. Even a widely-taught language like English lacked suitable linguistic descriptions until the early part of this century, the older grammars of it being mainly Latin-based and containing such unteachable paradigms as the following one for English nouns:

Case	Singular	Plural
Nominative:	chair	chairs
Genitive:	chair's, of a chair	chairs', of chairs
Dative:	to or for a chair	to or for chairs
Accusative:	chair	chairs
Ablative:	from a chair	from chairs
Vocative:	O chair!	O chairs!

Whenever incomplete, unsuitable, or too obviously prescriptive and/or historical grammars are selected for self-instructional programming, their deficiencies immediately become apparent and the effort has to be abandoned. (This does not, however, prevent language teachers from using such grammars in their classrooms and citing authority from them, and it does not prevent textbook writers from incorporating parts of such descriptions as lesson notes, or prevent examiners from including items based on such grammars in their tests.)

Third, there is often teacher resistance to any attempt to package the grammatical explanation part of any language course. Many language teachers consider it their own duty and/or prerogative to 'explain' the grammatical forms which the target language uses to build words, phrases, clauses, sentences, paragraphs, and longer texts. This tendency is common among teachers of familiar and unfamiliar languages alike, and the 'explanation' may be delivered either in the target language or another language medium. Some language teachers, in fact, enjoy this part of their work more than any other part. Thus whether or not the grammar and explanation approach is supposed to be used in a given teaching situation, it generally occurs in some form anyway. If grammatical treatments and other explanations (e.g. of discourse structure) are already included in the instructional materials, many language teachers will paraphrase them or give their own versions of the explanatory material.

A language teacher whose own oral competence in the target language is suspect may resort to grammatical or other explanation of the text in a more familiar medium (or even resort to translation of the text itself) as a convenient and face-saving way of performing orally in the classroom and at the same time seeming to teach. Apart from such flagrant cases, however, the language teachers who prefer to do their own explanations of grammar may have a valid point: No single programmed self-instructional course can anticipate what kind of explanation the students in a given class will respond to. Particularly when there are problems of motivation or attitude with respect to the target language, or when the students' notions of how their own language works are very hazy, the classroom teacher is in a far better position than the program developer to judge what kind of approach to grammar and explanation is likely to be meaningful to the students. (This same argument, of course, can be applied to any sort of self-instructional program in language for which teacher-directed instruction is also an option -- see 11.6.).

Finally, the grammar and explanation approach to language instruction, whether programmed or not, is subject to one of the constraints of the translation method: Unless the grammatical explanation is to be given in the target language itself (usually a viable option only for 'first-language' teaching), the class undergoing instruction must be linguistically homogeneous. Otherwise the grammatical explanations, programmed or not, have to be given in two or more media. With regard to the development of self-instructional materials, this means that several different media versions of the same materials have to be made available to the students. The heterogeneous class not only compounds the difficulty of curriculum development in this respect; it also complicates the application of contrastive analysis (between the target language and a number of languages familiar to the students) and comparative grammar in the design of the materials.

When the grammar and explanation approach is followed in homogeneous classes of native speakers of the target language, on the other hand, it often happens that even descriptive grammar is not especially relevant to the instructional program. This is especially so when the language in question is viewed as a sacred heirloom of the culture concerned -- to be cherished in its most traditional form and preserved from damage at all costs. Thus the emphasis on grammar and explanation for native speakers is often on how the language *used to* work or how it *should* work, rather than on how it is actually working in modern times. From a theoretical point of view, *historical grammar* (3.2.) and the *prescriptive view* of language (2.7.) may provide the most relevant inputs to the approach as it is most typically used as the *only* approach to language instruction.

10.3. **The audiolingual method**

In this section the discussion will touch on a variety of approaches to language instruction which have the common characteristic of exploiting the *oral* channels as a means of building up overall proficiency in the target language or building toward successful performance on a specific language achievement test. The term 'audiolingual method' itself is often restricted to certain narrower strategies and techniques of this general category, but there is no better term available to describe any type of approach in which the oral channels are considered primary. The exploitation of the oral channels in language *instruction*, however, does not mean that the language *curriculum* objectives are expressed in this way, or that the language syllabus is organized exclusively around speaking and understanding tasks, or that performance of language learners is to be assessed entirely on an oral basis. In fact, audiolingual methods are frequently used for language instruction even when it is known in advance that student performance is to be assessed in some other way -- for example, through 'objective' written tests which seek to measure overall proficiency or achievement of the specific aims of some language syllabus or other.

The basic rationale for all versions of the audiolingual method is that since 'first-language' learning normally begins with the oral channels, 'second-language' learning should be structured in the same way -- i.e. that the older student should learn to speak and understand spoken language before he attempts to read and write the new target language, just as the child does. This rationale, therefore, depends in part on the same assumptions about literacy that we have stated earlier (7.1. - 7.5.), and in part on certain pedagogical assumptions. But the main assumption of the audiolingual method is essentially a psychological one: namely, that the learning of a first language by an individual has enough in common with the learning of subsequent languages by the same individual that instructional strategies for the latter type of learning can be made to parallel the former type.

This rationale also effectively sets the audiolingual method apart from the translation method (10.1.) and from grammar and explanation (10.2.). As we have seen, it is possible to conduct language instruction of the first two categories without any reference to the oral channels, or (more accurately) with reference to the spoken language only insofar as it is represented by the standard orthography (mechanics, 7.3.) of the corresponding standard written language. All audiolingual methods expressly preclude such an approach, although reading and writing exercises can, and normally do, follow presentation and practice through the oral channels.

Because all versions of the audiolingual method emphasize speaking and listening at the beginning stages of any instructional cycle, it is rare for this method to be applied to 'first-language' teaching. The exceptional cases occur when 'first language' is actually a misnomer because the classes involved are in reality heterogeneous from a linguistic point of view (e.g. in English-medium schools in Singapore). Language arts courses for native speakers usually do, of course, make full use of the oral as well as the written channels, but the main purpose of using the oral channels is not to present the structure and vocabulary of the target language as such but to illustrate and practice the various uses of already-acquired grammar and lexis. The primacy of the oral channels in the audiolingual method, on the other hand, implies the presentation and practice of structures and vocabulary which are *new* to the learner.

The term 'structural method' has, unfortunately, sometimes been used interchangeably with 'audiolingual method'. In our view, the term 'structural method' is misleading because, just as in the case of grammar and explanation, the actual language instruction has to deal with vocabulary (lexical items) of the target language as well as with its phonology, grammar, and discourse (structural items). The audiolingual approach does, however, share with the grammar and explanation approach a common concern with presenting the complete grammatical description of the target language, in terms of instruction which aims at general proficiency, or as much of the grammatical description as the time available for instruction allows, in terms of a prescribed syllabus. Thus, a typical *structural syllabus* will consist of a list of language items, most of them having to do with pronunciation, grammar, and discourse rather than with vocabulary -- the list being ordered either in terms of presumed ease of learning of the items or in terms of their presumed frequency.

Structural syllabus is therefore a meaningful term; 'structural method' is not. Any given structural syllabus can be taught equally well through the grammar and explanation approach (talking *about* the structures) or through the audiolingual method (introducing the structural items via the oral channels and practicing the use of them in speaking and understanding before transferring them to the written channels). A structural syllabus can also conceivably be taught by the translation method, or in fact by any of the other methods and approaches described in this chapter, but the explanatory and audiolingual approaches, or combinations of these two approaches, are the most likely choices.

If the audiolingual method is used exclusively, the learner is supposed to deduce or infer the structures from exposure and practice. If the explanatory approach is used exclusively, the student learns grammatical rules and sets of forms cognitively, and from these he is expected to induce or generate examples of target language surface structure. Practical considerations account for the fact that the two approaches are often combined or used in alternating fashion in the same classroom or program, with one or the other approach usually receiving greater prominence or being considered the 'basic' approach.

The emphasis on the oral channels, in the 'pure' audiolingual method, makes possible not only a later conversion to the written channels, but also the exploitation of the non-verbal channels as part of the instructional sequence. The use of non-verbal channels, even pictures and diagrams, for translation and grammatical explanation can only have a sort of ancillary function. But audiolingual presentations and exercises can be easily and logically backed up by visual reinforcement -- pictures, solid shapes, realia, model villages or buildings, films, videotapes, movements and postures of the teacher, etc. -- because the student's eyes do not have to be focused on a page of text, a blackboard, or a projector screen as they do when written channels are being used for the presentation of texts. The student's own body, likewise, is free to respond to oral stimuli, to produce stimuli, and even to act out roles in a fixed or improvised dialogue.

One of the basic principles of the audiolingual method is that students should understand the meaning of new utterances in the target language, whenever possible, *without* translation or vocabulary glosses. If translations in the student's own language are supplied, for example, in dialogues for memorization, then the approach being used constitutes a hybrid of the audiolingual and translation methods. In the pure form of the audiolingual method, the instructional program attempts to supply meaning to the student via the non-verbal channels and by making use of the student's ability to infer from context (see 8.8.), through paraphrase in the target language itself and analogy with already-learned items, and through juxtaposition of new items with old items in context. That is, the method attempts to replicate the experience of a child in acquiring its first language as much as possible.

This basic principle, whereby new linguistic items and their combinations are to be learned *directly* through linguistic and non-linguistic experience, has led to the audiovisual method often being confused with the *direct method*. But the latter is really only one sub-category of audiolingual methods in general. The direct method, both in its pure theoretical form and in several modern applications of it (e.g. 'The Silent Way'), insists that *only* the target language medium and non-verbal channels be employed in instructional sequences, and this applies also to any subsequent acquisition of literacy skills. In other words, all forms of translation and grammatical explanation are effectively ruled out by the strict application of the direct method. The audiolingual method in general merely advocates the avoidance of explanation and non-target-language media as a guiding principle. On the other hand, the direct method, like all basically audio-lingual methods, does allow overlap with situational and communicational approaches to language instruction (10.4., 10.5.).

The importance of *visual* aids to the audiolingual method is often overshadowed by the seeming importance of *audio* aids -- from tape recorders and radios used in the classroom to fully equipped language laboratories. Although it is true that a great many language teaching programs based on the audiolingual approach make extensive use of tapes, audio equipment, radio transmissions, and language laboratory sessions, these are not components which are essential to the method itself. The relation between such aids and audiolingual instruction by teachers is, in fact, much the same as the relation between the grammar and explanation approach (10.2.) and programmed instruction. That is to say, elements in both kinds of programs lend themselves to self-instructional software. The difference is that the audiolingual materials, since the oral channels are emphasized, require considerable electronic hardware as well (tape recorders, radios, 'talking card' machines, recording facilities, etc.). But if there are enough language teachers available, and if these teachers have the language proficiency, the pedagogical skills, and the teaching/learning materials required by the method, there is nothing that electronic equipment can do that such teachers cannot do at least as well, if not better. The decision as to whether or not to use audio aids in a given program of language instruction thus depends on cost effectiveness and other non-methodological constraints of the school where the instruction is to be given. The hardware and non-verbal software used in *visual* displays, on the other hand, are essential to the audiolingual method itself -- far more so than audio equipment and programs are.

The reason why audiolingual self-instruction cannot be programmed to the same degree that grammar and explanation can be programmed also has to do with the limitations of hardware. The written responses to a set of programmed materials can be monitored by the learner himself (or by his peers) as well as by the teacher, but in the last analysis it takes a teacher to monitor oral responses. Electronic equipment is of great value, of course, in developing passive oral skills (e.g. through listening comprehension exercises) without the presence of a teacher being required. But electronic equipment, in its present stage of development at least, cannot be used to evaluate and correct oral responses, and self-monitoring or peer-monitoring is often a risky business. Thus even a fully-equipped language laboratory needs a teacher in attendance to monitor student responses, either randomly or systematically, whenever active oral production is called for.

This same hardware constraint also affects the evaluation of language instruction based on the audiolingual method. An achievement test based on an audiolingual-structural syllabus, for example, should measure active performance as well as receptive competence. This can be done only by interviewing individual students, or having them respond orally to recorded verbal stimuli or non-verbal stimuli. Simultaneous mass testing is out of the question, because the evaluation of oral performance must either be done on the spot or the performance must be recorded for later evaluation. In the former case, there have to be as many examiners as examinees. In the latter case, 'test security' becomes a factor. The security is broken as soon as the first batch of students have been recorded, unless there is a separate recording facility for every single member of the population to be tested. Thus the usual method for evaluating the results of audiolingual instruction on a mass basis emphasizes listening rather than speaking skills, and the responses required of the students may even be non-linguistic ones (e.g. checking multiple-choice options). If only small numbers of subjects are to be tested, of course, the problems of evaluating oral proficiency, or any other kind of outcome of audiolingual instruction, are less serious but questions of test reliability and validity are raised instead.

The final point to be made about the audiolingual method has to do with its relationship to certain theoretical positions in linguistics and psychology. It has often been said (possibly accurately) that the audiolingual method of language instruction is the offspring of a temporary liaison between the structural school of *descriptive grammar* (3.3.) and *behaviorist psychology*. This is probably true in the historical sense, though not necessarily so in a theoretical sense. In any case, the argument that the (alleged) obsolescence of these theoretical positions makes audiolingual instruction also obsolete will not stand scrutiny. A child does not die just because its parents do, and the fact is that the audiolingual method as such persists in many programs of language instruction around the world today. One possible reason for this persistence is that those in charge of language instruction find this approach more satisfactory than alternative approaches at their disposal.

Even the assertion that the audiolingual method in all its present manifestations could not have come about without the union of descriptive grammar with behavioral psychology is suspect. Emphasis on the oral channels in language teaching, as a matter of fact, antedates both structuralism and behaviorism, and some kind of audiolingual method would probably have evolved anyway, even without these theoretical underpinnings. The advent of sophisticated audiovisual hardware for various applications to education would have made such a methodological development almost inevitable.

10.4. The situational method

As its designation suggests, the situational method of language instruction focuses on specific situations where the target language is used, rather than on its forms, its meanings, or its channels. While the situational method shares many surface resemblances to the audiolingual method (10.3) in general, and to certain specific applications of the method (the use of memorized dialogues, for example), it must be distinguished from the latter on basic principles. First, although the situational method often emphasizes the oral channels, there is no assumption that each new language-using situation should be first presented with all the participants in it speaking rather than reading and writing. Second, the audiolingual method does not require that the roles of each participant in a language event be specified, or that the setting, topic, and other variables of the event should be considered as part of the text, but the situational method does require this. Third, while a syllabus based on an audiolingual approach must somehow specify the linguistic items to be learned (i.e. items of pronunciation, vocabulary, grammar, and discourse), a syllabus based on language-using situations need not do so.

It is this last difference that sets the situational method most sharply apart from grammar and explanation (10.2.) and the audiolingual method. The content and sequencing of a situational syllabus or program of instruction depends entirely on what language-using situations the learner is most likely to encounter when he begins to use the target language in order to communicate. The difficulty of the particular linguistic items, and even their general frequency in the language as a whole, does not (in theory, at least) enter into consideration. If it is known that the students are going to be using the language in particular settings (e.g. business offices), in certain role relations (e.g. employer-employee), about particular topics (e.g. marketing of local products), then these situations become part of the syllabus or instructional sequence. If it is known that the students are likely to be using the target language mainly in Country X, then the linguistic and cultural characteristics of Country X must be emphasized both in the instructional materials and in the teacher's performance as a user of the target language.

Whenever the actual linguistic forms to be taught *are* specified, however, the designer of the situation-based syllabus or program has essentially only two options: (1) to specify discrete items of pronunciation, vocabulary, and grammar, as in a standard structural syllabus (see 10.2. and 5.3.); (2) to specify semantic and pragmatic intents, as in the functional/notional syllabus (see 10.6. and 5.5.). If the program designer chooses to specify content in terms of speaking, listening, reading, and writing tasks, the situational approach merges with the communicational approach (see 1C.5. and 5.1.); the emphasis is no longer on linguistic items but on channels. In any case -- that is, whether linguistic items or channels of communication are specified -- the syllabus or program ceases to be a situational one as soon as the *ordering* of the instruction is based on anything but language-using situations.

Measuring the performance of learners undergoing language instruction by the situational method, and especially testing their actual achievement of a situational syllabus, is quite difficult. Logically, the situations in which they have learned to use the target language must be recreated somehow in the testing context, as well as in the classroom context. This requires at least one other human participant, unless the test stimuli and/or responses are written or recorded, in which case the 'situations' become unrealistic in that no spontaneous feedback can be expected from other participants in the communication event. This type of constraint is not present in the first three instructional approaches we have considered (10.1.-10.3.), but it is present in all approaches in which communicative competence, rather than language proficiency, is emphasized (10.4.-10.6.). It makes not only formal achievement testing in any such program difficult to accomplish, but also rules out standardized proficiency tests as measures; as noted previously (5.8.), communicative competence cannot be fairly assessed by such measures, and is always more difficult to assess.

There are other ways, fortunately, of assessing the performance and progress of students in a situational program, provided only the curriculum is controlled by the program designer (i.e. provided no external examinations or other achievement tests are required for grading and ranking students). If the language-using situations of the program, for example, can be convincingly recreated in the classroom, or if the students can be taken out of the school occasionally to participate in authentic situations requiring the use of the target language, then the performance of the students can be informally evaluated according to how well they function in these simulated or authentic settings. This type of assessment can be a continuing process, as opposed to a one-time test, and it enables the teacher not only to rank or grade students (if necessary) but also to regulate the pace of instruction and to evaluate the program as a whole in a formative way. In this sense, assessment of student performance and progress is *easier* than in the approaches discussed previously, because each learner can be directly observed functioning in a way which automatically demonstrates his degree of control of the program content.

A difficulty inherent in the situational method (apart from problems of formal testing) is the danger of defining situations either too broadly or too narrowly. This difficulty does not arise when the student population is small and when the most likely language-using situations are common to the whole population. For example, if the instructional program is for a group of immigrants recently arrived in the same city of a foreign country, each class in the program will share such concerns as asking directions, using public transport, shopping, job-hunting, house-hunting, and so on. The problem arises when the situational method is planned for whole school systems, different age-groups, different occupational groups, or any population which is widely dispersed in terms of geographical, social, or cultural settings. It is especially difficult to design a situational *syllabus* which will apply to several different target languages (although this has been tried, for example at the Foreign Sevice Institute in Washington in connection with language training for people going overseas).

To cite a typical instance of a situation definition that is too broad, a syllabus requirement for 'greetings and introductions' may be a simple enough concept in a language like English, where it can be taught through a relatively small number of situations. But for a language like Javanese or Korean, with multiple address-forms, levels of address, complex role-relations and kinship systems, 'greetings and introductions' is by no means a simple matter, and the syllabus requirements must be stated much more narrowly. A teacher of Javanese who took the broad requirement seriously could easily spend several hundred hours teaching his students how to greet people and make proper introductions.

An opposite example, of a specification which is too narrow, might be 'persuading one's superior to change his mind at a public meeting'. In some cultures, and hence in some languages, this kind of persuasion is never done by the subordinate himself and is seldom done by anyone at public meetings; it may be accomplished only in private through an intermediary of equal rank. In such languages, therefore, there would be nothing to teach under this heading, because the situation as described simply does not arise. A broader specification, perhaps something on the order of 'persuading someone to change his mind' might be called for here.

A situational area like 'shopping' provides another example in which the specification may be either too broad or too narrow, depending on the cultural context. The linguistic and sociolinguistic differences between haggling with a street vendor over the price of fruit, and determining the fixed price of the same fruit in a supermarket, are enormous. In some cultures one of these situations may be more important than the other, while in other cultures both situations may be equally important for the learner to know how to handle.

It is not uncommon for the situational method to be used in tandem with audiolingual approaches, because in both types of approach the oral channels are regularly exploited, whether in presenting new linguistic items or new situations. As observed earlier, both methods frequently involve the use of memorized dialogues. In the true situational method, however, the *roles* of the participants in the communication event, the *setting* of the event, and the *topic* of the interaction are more important considerations than the particular language forms which the participants use to express their role relations, their adjustments to the setting, and their treatment of the topic. Thus the theoretical basis of the situational method is more *sociolinguistic* (see 3.4.) than linguistic. Insofar as linguistic items are concerned, the analysis may be either along structural or functional/notional lines, but it is always text analysis (7.7.) of authentic or simulated communication events, rather than overall linguistic analysis, that yields the most information for the program or syllabus designer. And within text analysis, because of the sociolinguistic parameters, *discourse analysis* is more important than the analysis of smaller grammatical and phonological components of the texts concerned.

10.5. **Communication tasks**

A program of language instruction or a language syllabus can also be organized around various communication tasks. This type of organization cannot properly be called a 'method', however, because there is no special methodology attached to the teaching/learning process which differs in any way from the normal uses of pedagogical channels in general curriculum (see Chapter 1). The teaching techniques and learning strategies associated with language instruction based on communication tasks, in other words, can be selected from the same range of possibilities that exists for instruction in science, social studies, fine arts, or any other curriculum area. Communication tasks are therefore an *approach* to language instruction rather than a separate methodology.

The communicational approach to language instruction represents, in most cases, a frank acceptance of the fact that certain *study skills* (such as those described in Chapter 6) should be taught or learned in connection with language courses -- usually because these skills are not being taught or learned elsewhere in the school in the language medium concerned. As an approach to language instruction, communication tasks are the direct antithesis of grammar and explanation (10.2.), in the sense that the latter approach takes the *uses* to which the target language will be put completely for granted, while the former approach takes the target language itself completely for granted.

A communicational approach, therefore, will not work unless students are native speakers of the language concerned, or have at least learned or acquired some proficiency in it -- for example, through prior schooling in the target medium or through prior language instruction based on some other model. Just as students who have learned *only* about the grammar of a language cannot be expected to use the language until they have been given at least some communication tasks to perform, students cannot perform communication tasks of any sort until they know at least some of the relevant linguistic forms. Nevertheless, a language *syllabus* based on communication tasks is quite feasible. Such a syllabus specifies certain tasks (always involving study skills as well as language proficiency) which must be performed in the target language medium.

For example, a given communicational syllabus might specify that students are to relay verbal information in the target language (6.2.), use reference materials written in the target language (6.4.), take notes on lectures and summarize what they have read (6.6.), or even translate texts in the target language into another language (6.8.). If the language learners under such a syllabus are genuine beginners, of course, the actual instructional program will have to begin with one of the other approaches or methods described in this chapter -- for example, a situational or audiolingual approach. Since a particular type of language syllabus never rules out instructional sequences based on methods which do not correspond to the manner of syllabus specification, such alternative approaches might continue long after the students have acquired a basic proficiency in the target language.

It is not at all uncommon, in fact, for an instructional program based on communication tasks to follow, and be founded on, earlier programs using one of the other approaches. For example, in Malaysia in the late 1970's, primary school students were taught English along the lines specified by a structural-audiolingual syllabus, lower secondary school students were taught under a structural-situational syllabus, and only at the upper secondary level were students expected to apply what they had learned in terms of a communicational syllabus which emphasized study skills in the English medium.

The basic skills necessary for relaying verbal information are easily taught by the audiolingual method. Typical communication events calling for such skills can first be introduced through the situational method, and so on. Even the groundwork for such sophisticated skills as conducting interviews (6.5.), debating (6.7.), and interpreting (6.8.) can be laid through instruction that follows one of the approaches previously described in this chapter. At the level where the communicational approach begins to be applied in earnest, moreover, diagnostic testing (9.7.) and error analysis (8.7.) become extremely valuable tools for detecting persistent areas of linguistic deficiency, and these problems can often be remedied by going back to one of the earlier approaches.

The communicational approach focuses on the channels of the communication event itself, rather than on the linguistic forms and sociolinguistic situations that define the event. The particular spoken, written, and non-verbal channels occurring in any communication event may have to be used actively, passively, or in both directions by the learner. The channel variables, moreover, may include all of those described in Chapters 7 and 8: message rate, channel noise, message producer and consumer variables, comprehension task variables, and audience variables (7.1., 8.1., 8.6.).

The student must learn to use not only clean and clear channels, but also messy and noisy ones. He may have to deal with broadcast or recorded speech as well as with live speech, and he may have to deal with temporarily displayed written texts as well as with conventional printed texts. Production task variables (8.4.) may range from 'no overt response expected' to 'immediate feedback expected', and the audience variables may be determined by the student himself or by others. The comprehension tasks faced by the learner, likewise, may vary in a similar manner. In other words, communicational language instruction can replicate the channel uses of general curriculum in every way, and may even include channel uses that do not occur in the school at all but which are thought to have future relevance for the student in communicating via the target language -- for example, writing a resume for prospective employers.

The content and objectives of the typical communicational syllabus are often specified in terms of traditional language skills: speaking, listening, reading, and writing tasks. But the specific communication tasks may involve non-verbal stimuli or responses as well -- for example, describing pictures, carrying out oral instructions. In assessment, partial comprehension and performance are quite often considered alongside the presumed norms for educated native speakers of the target language. In this case, general tests of language proficiency or communicative competence can sometimes be substituted for more specific measures of the ability to perform the prescribed communication tasks. But, as in the case of the situational syllabus (10.4.), achievement tests directly based on any communicational syllabus are difficult to construct, time-consuming to administer, and must nearly always be evaluated subjectively.

The objectives of the typical communicational syllabus or instructional program, on the other hand, are among the easiest for the non-specialist to state or understand. Since neither the linguistic nature of the target language, nor the sociolinguistic implications of the situations in which it is used, need to be considered, a statement of objectives can simply rest on pedagogical and post-schooling needs. For example, if students being instructed in one language medium are expected to switch to another medium for their general curriculum at a later stage of education, the kinds of communication tasks to be included in programs of instruction in the new target language will depend entirely on the way the future curriculum is to be taught. That is, the pedagogical needs can be specified in terms of channel uses and study skills in the new medium as they occur in general curriculum. The language specialist is required only to interpret these pedagogical needs as syllabus content, more specific program objectives, or some other kind of blueprint for instructional sequences in the new target language.

The content of actual syllabuses and programs based on the communicational approach is often specified for language instruction in highly specialized schools, or even outside of schools. For example, diplomatic services, military services, and businesses with overseas branches may want some of their employees to be able to function in certain foreign-language media. The communication tasks involved, as well as the typical situations of language use, can usually be specified by administrators or executives of the organizations concerned with a fair degree of accuracy, whether or not these same executives can themselves function in the relevant foreign language media.

For example, the 'short' and 'long' descriptions of the United States Foreign Service language proficiency levels, designated S O-5 for speaking and R O-5 for reading, are basically specifications of communication tasks which are to be performed through the oral and written channels in various foreign languages (i.e. languages other than English), although the 'long' descriptions contain some situational content as well. These definitions of proficiency levels by themselves, of course, do not constitute a language syllabus, but they define objectives for the language syllabus designer or program developer to work toward. And they represent a conscious attempt to make the proficiency levels more or less equivalent regardless of what particular target language is to be taught.

Another example of an approach based on communication skills is provided by a course designed and administered at the Civil Service Institute in Singapore. This particular case serves to show clearly how study skills and communicative competence can be much more relevant to 'language' instruction than language proficiency is. The Civil Service Institute was asked to conduct an English course in report-writing for high-level administrators in the Singapore government. The objective specified by the government for the course designers was simply that the administrators were to learn how to write reports and memos in 'clean, clear English prose'. An error analysis (8.7.) of the actual written products of a representative group of civil servants at this level, however, revealed few linguistic errors of any kind (i.e. errors in grammar or vocabulary selection); the 'mistakes' that were located were mainly stylistic ones -- e.g. 'pompous', 'too long', 'ambiguous', 'untrue', and 'irrelevant', and even 'messy' expression. The course, therefore, had to be designed primarily to teach the participants to remedy their faults in text organization, style use, and audience selection; very little language instruction as such was built into it.

For native speakers of the target language, on the other hand, language instruction of a very similar nature is often given to learners who are very much younger than the learners in the preceding paragraph. The typical 'language arts' course (as opposed to instruction in the literature of the target language) in primary and secondary schools has elements of the communicational approach built into it. As soon as a satisfactory degree of literacy has been achieved, the communication tasks will typically include the written channels as well as the oral ones, with elements of the creative and critical uses of language often being included in the program as well.

In summary, the communicational approach to language instruction sometimes involves no basic language instruction at all, but rather aims to provide opportunities for students to apply previously-acquired language proficiency to meaningful communication tasks in various channel combinations of the target language medium. The resulting instruction involves development of study skills (Chapter 6) more than language skills, and resembles very closely instructional models found in general curriculum. Probably the most important inputs from the linguistic side to the design of communicational syllabuses and programs come from error analysis (8.7.) and diagnostic testing (9.7.). The results of such diagnosis may indicate the inclusion or review of certain linguistic items in the communicational program.

10.6. The functional/notional approach

The functional/notional approach to language instruction and syllabus design is historically the newest, yet philosophically the oldest, of all the approaches. In one sense it represents the end of a cycle of methods and approaches, because it incorporates elements of all the previously-described methods of language instruction (10.1.-10.5.), but in another sense it represents the beginning of a cycle, because it leads logically back to the oldest method of all, translation, as the next 'advance' to be expected in language teaching methodology. Because of the current popularity of the functional/notional approach (at least among theoreticians), however, it will be necessary to give considerable space to a discussion of it -- perhaps more than is warranted by successful applications of the approach to date.

What distinguishes the functional/notional approach from all other methods and approaches is that the specification of what is to be learned by the language student is embodied in terms of semantic and pragmatic content rather than in terms of surface linguistic items, language-using situations, or communication tasks involving various channel combinations. The terminology varies from one theorist or practitioner to another, but the common ground is that the underlying meanings and communication intents (see 5.5.) which the learner will need to express in the target language *can* be specified in terms of an overall taxonomy of possible meanings and intents. Such a taxonomy would include at least two categories of content: (semantic) *notions* and (pragmatic) *functions*. (Other writers on this subject prefer to use the single term 'notions' to include both categories, so that for these writers the functional/notional approach is simply a 'notional' one.) The important point is that it is the functions and notions themselves, and not how they happen to be represented in some particular language variety or code, that constitute the substance on which the language instruction should be based.

Like the communicative model described in the previous section, this is an *approach* to language instruction rather than a *method*, because the assumptions have more to do with syllabus design (and by extension with achievement testing) than with how the target language is actually taught. For example, most practitioners of the functional/notional approach concentrate on developing course materials, and some even insist that the teaching/learning strategy is determined by the materials rather than the objectives of the course, but none make the assumption that there are particular methodological constraints on the style of presentation of the content to be learned. There is even disagreement as to whether the items of a functional/notional *syllabus* should be ordered or not, some preferring to leave the ordering of items to the instructor. And there is no assumption that any particular strategy, such as translation, grammatical explanation, presenting new material through the oral channels first or through recreated situations or communication tasks, should invariably be employed.

Superficially, the functional/notional approach seems to have most in common with the situational method (10.4.) and the communicative approach (10.5.) and is in fact often confused with these. Actual instructional programs which follow any one of these three models will indeed have much in common. But the defining features of situations (roles, settings, and topics) can all be specified in terms either of functions or of notions, and different communication tasks simply become different ways of expressing semantic and pragmatic content through various channels -- the particular channel combinations being determined, in turn, by the situations. All three of these approaches, moreover, share the common problem of fair achievement testing: It is no easier to measure, though, actual student performance, the degree of mastery of notions and functions than it is to assess students' ability to interact in certain situations or to perform prescribed communication tasks. (In some respects, evaluating an instructional program based on a functional/notional approach is even more difficult, because inferences about competence always have to be made from performance, and functions and notions are never on the surface.)

The functional/notional approach also shares certain less obvious similarities with the audiolingual method (10.3.) and with grammar and explanation (10.2.). The approach requires that a thorough analysis be made of the phonology, lexis, syntax, and discourse features of the target language. This analysis is not necessary for the syllabus specification itself, but it becomes necessary as soon as instructional materials are developed, because otherwise it cannot be asserted that the surface linguistic items in the materials indeed represent the pragmatic and semantic content which is intended to be learned. The grammatical analysis overtly specified in the grammar and explanation approach may be either a formal or a functional one (or even a combination of both, as in the traditional type of grammatical analysis), as can the grammatical analysis underlying a particular application of the audiolingual method (though in practice, since a structural syllabus is so often associated with this method, the analysis here is more apt to be based on forms than on functions). In the functional/notional approach, of course, the analysis must start with pragmatic and semantic concepts and work toward surface manifestations of them.

Many functional/notional syllabuses, in fact, go so far as to list the surface forms that are to be learned in the target language. For example, under a notional category such as 'permission and obligation', a given target language may have specific finite verbs, nouns, and adverbs referring to acts of permitting and obliging, special modal auxiliaries or verbs corresponding to these notions which are associated with certain types of word orders or other syntactic patterns, and even special intonation patterns, voice qualities, or gestures commonly used in giving permission or stating obligation. The syllabus may recommend the presentation of these linguistic and paralinguistic items as a cluster, or in a cyclical fashion determined by the frequency or presumed difficulty of the items; or it may simply recommend that they be included somewhere in the instructional program. If a particular ordering of the items is indicated, then the syllabus will superficially resemble a structural syllabus (such as is commonly found in association with programs that use the audiolingual method) to that extent.

A way in which the functional/notional approach may be said to resemble the audiolingual method (and the translation method) more directly is the shared assumption, implicit in all three approaches, that what has been learned through one channel can be successfully transferred to another channel by the learner. In the case of the audiolingual method, the assumption is that what has been learned orally can be transferred to written (and non-verbal) channels with only a little practice. The translation method, at least in its most common form, relies heavily on the written channels and implicitly assumes that transfers can be made in the opposite direction. The functional/notional approach, unless it is combined with communication tasks, simply assumes that what is cognitively acquired (i.e. the relation between an essential function or notion and its surface manifestations in the target language) can then be applied through either the oral or the written channels, regardless of the channel utilized in the original learning process. The situational and communicational approaches to language instruction do not necessarily make this assumption. Each situation or task presented, if its parameters are complete, includes both the participants and the channels. Whenever it is important to handle a given topic through other channels and participant groupings, the topic will automatically recur when the new situation or task is introduced.

Another common ground between the functional/notional approach and the translation method has to do with theoretical orientations. Obviously, if it is believed that there are right and wrong ways of translating or interpreting between Target Language T and Familiar Language F (this belief being crucial to the implementation of any translation method), then the convertibility T→ F or F→T must rest on a common set of functions and notions expressed differently in T and F respectively. If there were no differences in the T and F surface forms, then T and F would be the same language and translation would be unnecessary. As we have seen, the differences can be revealed, in the case of related languages, through comparative grammar, and in the case of unrelated languages, through contrastive analysis. But in order to contrast or compare surface features with a view to convertibility of the features, we need points of similarity beneath the surface, and these can only be what are called functions and notions -- i.e. a shared set of semantic and pragmatic features.

It is possible to organize language instruction along grammatical, audiolingual, situational, or even communicational lines without reference to any language other than the target language, and also without direct reference to the underlying pragmatics and semantics of that language. It is *not* possible to organize language instruction through the translation method without at least implicitly matching functions and notions in the two languages concerned, and it is *not* possible to organize instruction along functional/notional lines without specifying functions and notions which, at least potentially, can be expressed in languages other than the target language.

The practical consequences of these observations are quite obvious. If it is thought desirable to develop a language syllabus which is capable of being simultaneously applied to several different target languages, then the functional/notional and translation approaches are the only possible answers. If the translation method is chosen, however, it means that equivalent texts (i.e. texts equivalent as to both content and difficulty) have to be provided in all the languages concerned, and this is quite difficult to achieve. If the functional/notional approach is chosen, results of instructional programs in terms of objectives, and evaluation of student progress toward the achievement of these objectives, will then be quite comparable regardless of the particular target language studied.

This last consideration was, in fact, part of the rationale behind the Council of Europe's language credit system in the 1970's, which enabled students from different countries of Europe to transfer their language credits from one language medium to another, regardless of the country in which they were actually attending instruction. The credit system was initially based on the concept of a functional/notional syllabus, although later modifications were made using the basic concept. The intent was to make possible a direct comparison of student achievement levels (or even proficiency levels) in such different languages as English, French, and German.

From a theoretical point of view, the functional/notional approach to language instruction or syllabus specification implies two types of theoretical input which are not necessarily present in the other approaches and methods discussed so far (even in the translation method). These are the concepts of *universal grammar* (3.5) and *cognitive psychology*. Universal grammar is a necessary underpinning of any attempt to construct an exhaustive taxonomy of functions such that the language program developer will not be likely to miss any semantic or pragmatic pigeonhole in his analysis of learner needs. Cognitive psychology is equally essential to the approach from the learner's point of view -- without it, there can be no explanation for (or reasonable expectation of) the learner's conscious link between the surface forms and their meanings. Perhaps this is why the audiolingual method, which is so often associated with structural grammar and behavioral psychology (10.3.), is considered by many writers to be the antithesis of the functional/notional approach. But, as we have seen, even these two approaches share common features.

10.7. **Discovery-oriented approaches**

In a sense, *all* approaches to language instruction are 'discovery-oriented'. That is to say, whatever the syllabus specifications, the instructional materials, or the recommended teaching/learning strategies are, the student is always expected to make inferences, analogies, or transfers based on skills or content which has been explicitly taught and to apply these to skills or content which has not been taught. In the general area of grammar and translation methodology (10.1.-10.2.), for example, the student is expected to later produce utterances in a target language which has been largely presented to him in a static (usually written) form, without having had any experience even with simulated communication. In the typical audiolingual method (10.3.), the student must rely mainly on himself to make the transfer from the oral and non-verbal channels to the written channels. In the strictly situational and communicational approaches (10.4.-10.5.), linguistic items, grammatical rules, and explanations must either be known in advance or deduced from the texts presented. The functional/notional approach (10.6.), as we have just seen, is probably the most discovery-oriented of all the approaches to language instruction.

All of the methods and approaches to language instruction discussed so far, however, have two things in common: (1) They have a single target language in mind, and this target language is known in advance; (2) all the methods and approaches can have language syllabuses based on them, and they can have language examinations (and hence language curricula) based on them. There is a separate 'discovery-oriented' approach to language learning (but not to language instruction or curriculum as defined in this book) which also needs to be discussed, and this becomes the subject of the present section.

The discovery-oriented type of instruction has the objective of preparing students to learn or acquire *any* target language, or any one of a group of related target languages. Typically, it is applicable where the number of prospective learners for a given target language is too small to warrant the organization of conventional language classes, or where the specific target language among a group of related languages remains unknown at the time when language learning ought to be initiated. (Such programs have been mounted, for example, for American Peace Corps volunteers undergoing general training as a group but slated for assignment to many different African countries.) In theory, of course, such an instructional program would be beneficial to any prospective language learner, or to large groups of learners whose target language was known, as a substitute for (or a prelude to) more conventional language instruction. Through mastery of discovery procedures, the learners could presumably acquire the target language more rapidly once given the opportunity to be exposed to it.

This type of language program has been called 'technique-oriented' on the grounds that emphasis is on the techniques of language learning. These techniques are ultimately based on second-language, rather than first-language, learning theory, because by the time the student has developed the capacity to understand the content of the instruction, he must already have learned his first language. The techniques to be included in the instruction, moreover, must have first been hypothesized from linguistic and psycholinguistic theory and then verified through research on successful second language learners under varying types of conditions. Only then can the body of theory be helpful to the learner in his task of discovering the systems of new languages. Thus the content of the technique-oriented program or syllabus has more in common with 'new math' or discovery-oriented science than it does with any form of language instruction.

A syllabus can be derived from the objectives of such a program, and its content can be specified and ordered in just the same way that the content of a language syllabus can be specified and ordered. It would even be possible to base an achievement test on such a syllabus. But the syllabus for a technique-oriented language program would not be a language syllabus (as defined here), and the achievement test based on it would not define language curriculum, because successfully completing the syllabus or passing the test would not guarantee that any target language would actually have been learned.

The real evaluation of the technique-oriented program comes only later, when the learner has the opportunity to apply the techniques to the task of acquiring a specific target language. And even then, any measure of the degree of his success would have to be derived from one of the methods and approaches described earlier in this chapter, or else inferred from a general test of language proficiency or communicative competence. It would take some kind of a controlled experiment, moreover, to determine whether the degree of success, so measured, was actually attributable to the technique-oriented program the learner had previously undergone -- that is, to ascertain to what extent the same learner would have learned the target language *without* the discovery techniques.

As in the case of the translation method and the grammar and explanation approach, the medium of instruction in a technique-oriented program has to be a language familiar to at least the majority of students in the class. Samples of real or artificial languages will, of course, be included in the program for problem-solving purposes, but the presentation and discussion of these samples or problems (just as in mathematics and science) must be conducted in a common language medium. Thus the technique-oriented program suffers from the same medium constraints as do translation and grammatical explanation -- the program cannot very well be offered to a linguistically heterogeneous class.

The content of any technique-oriented program, moreover, will include elements which closely resemble short courses in linguistic analysis and second-language learning theory (see 3.6.). Candidates for instruction, if they are pre-tested at all, should logically be given a *language aptitude test* (9.5), with directions written in the common language medium, rather than any other kind of language test. If the candidates are expected to acquire a completely new target language on their own, after undergoing the technique-oriented program, no amount of motivation and opportunity is likely to offset low language aptitude. Even the progress of the low-aptitude student in the linguistic analysis component of the technique-oriented program itself is apt to be unsatisfactory.

In summary, the technique-oriented approach to language instruction may increase individual ability to acquire new target languages, but it cannot be considered as an approach to language instruction which is on a par with the first six approaches discussed in this chapter. No *language* syllabus or language achievement test can be based on the approach, because the actual target language is unknown. Theoretical inputs to a technique-oriented program come mainly from psycholinguistics, linguistic analysis, universal grammar, and aptitude testing.

10.8. Language for Special Purposes

A four-way distinction among methodologies (and materials) for language instruction has often been made which cuts across the various methods and approaches discussed in the first seven sections of this chapter. This distinction depends partly on the linguistic background of the learner population and partly on the purposes for which the population is learning the target language. The four general methodology categories are as follows:

(1) First language instruction (sometimes called 'language arts')
(2) Second language instruction
(3) Foreign language instruction
(4) Language instruction for special (or specific) purposes

A brief examination of this categorization can be conveniently combined with a summary of the chapter.

'First language instruction' is designed to be applied to learner populations consisting entirely or preponderantly of native speakers of the target language in question. In some countries this is called 'language arts' instruction, and in others it is simply designated by the name of the target language. In both cases, it is frequently combined with instruction which clearly belongs to general curriculum: e.g. literature, creative writing, moral education, and study skills instruction.

'Second language' and 'foreign language' instruction are terms applied to learner populations consisting entirely or preponderantly of speakers of languages other than the target language. The difference is that 'second language' instruction carries the connotation that the target language has other uses in the school or community besides being a subject of study in its own right; 'foreign language' instruction usually carries the opposite connotation. In methodological terms, however, the distinction between the two categories tends to be a rather shaky one.

Language instruction 'for special (or specific) purposes', finally, is designed to be applied to learner populations with well-defined linguistic needs -- e.g. groups with the same occupational, academic, or life-enrichment goals. In theory, such a population could be a 'first language', a 'second language', or even a 'foreign language' one; in practice it is almost always a 'second language' population.

As we have seen (in Chapter 2), labels such as 'mother tongue', 'first language', 'second language', and 'foreign language' are nearly meaningless in popular usage, and even in many educational usages; such terms must be carefully defined if they are to be used to make sweeping distinctions. The fact is that the line between a native speaker of any given language variety and non-native speaker of it is a very hard line to draw even when the language variety itself is well defined. The phenomena of individual bilingualism and diglossia, which are in fact fostered in very young children by many school environments, further complicate the intended distinctions. We have also seen (in Chapter 5) that there are many ways for learners to acquire languages relevant to the school outside the language classroom. What started out in early schooling as a 'foreign language' for a certain group of learners may shade into a 'second language' and what started out as a 'second language' may come close to being a 'first language' in some advanced schooling situations. Even a 'mother tongue' or 'first language' may fail to develop in the normal way because of education in a different language medium. Thus the first three categories of language instruction methodology tend to overlap in many countries around the world today, and the intended distinctions remain unblurred only in monolingual countries with relatively static school populations -- for example, Japan.

Of the available methods for language instruction described earlier in this chapter, it is true that some are more applicable when the learner populations consist entirely of native speakers of the target language, and other approaches are more applicable when the learner population consists entirely of students to whom the target language is an unfamiliar one. But when it comes to teaching the mechanics of a written language (7.3.), treating errors in oral or written expression 8.7.), or converting speakers of one dialect of the target language into speakers of a more acceptable dialect, any one of the methodological approaches can be applied to any kind of student population. If the language curriculum requires that students be able to talk *about* the analysis of the target language, for example, grammar and explanation becomes a possible approach for both native and non-native speakers. If general curriculum or other considerations require that study skills be acquired in connection with language instruction, the communication task approach may be indicated even for 'foreign language' learners with little proficiency in the target language. If the learners are native speakers of the 'wrong' dialect of a given target language, a form of the translation method may be applicable even in a 'first language' situation, and so forth.

Thus the choice of methodology (and materials) in language instruction does not necessarily depend on brand categories of learner populations such as those listed at the beginning of this section. Rather, it is the *needs of particular groups of learners* that should determine both the methods and the materials chosen for language instruction. These needs may be in terms of language curriculum, general curriculum, or non-school requirements (e.g. occupational needs), or any combination of such needs. The basic questions concerning needs assessment itself, and of language syllabus design based on needs assessment, are taken up in the next chapter (11.3.-11.4.). It should be apparent from the examples given in the preceding paragraph, however, that the distinction among 'first language', 'second language', and 'foreign language' instruction, although sometimes a useful one, by no means constrains the possible choices of methodological approaches to a given instruction sequence.

This brings us to the fourth general methodological category: 'language for special (or specific) purposes'. This probably unnecessary term was invented mainly for historical reasons. At one time, all language instruction was thought to have a single (explicit or implicit) ultimate goal. This ultimate goal, defined in our terms, would be *to reduce all channel distances in the target language medium to zero.* In other words, all language learners, it was thought, should be aiming at a language proficiency (and perhaps also at what we would now call a communicative competence) equivalent to that of an educated native speaker of the target language. Hence all language instruction sequences, it was thought, should represent steps along this single road, which has no forks or branches in it. (The target language itself was often defined in prescriptive or even historical terms; this helps to explain the former popularity of the grammar and explanation approach, and the present disdain of this approach.)

Once we accept that the aims of language instruction in schools are determined not only by language curriculum but also by general curriculum and other considerations, however, it becomes apparent that the former universal goal of native proficiency is either unattainable (as in the typical 'second' or 'foreign' language situation), or that it is insufficient even when attained, because cognitive and experiential development, study skills, creativity, critical senses, and the like are expected to be fostered by language instruction along with the attainment of proficiency and/or explanatory prowess with regard to the target language (as in the typical 'first' language situation). When language engineers and program developers began to design courses to meet the needs of specific groups of language learners ('English for Academic Purposes', 'Russian for Scientists', 'French for Hotel Employees', etc.), they found it necessary to coin a new term to describe what they were trying to accomplish and to distinguish the courses they were developing from traditional types of language instruction that aimed at reducing all kinds of channel distances in equal measure and eventually producing a reasonable facsimile of the 'educated native speaker'.

The only thing that really distinguishes 'language for special purposes' courses from other types of language instruction is *restriction of topic*. The methodology of the instructional sequences is not affected; only the nature of the instructional materials. The restriction of topic -- say, to chemical engineering, for example -- can be manifested through any one of the first six approaches discussed in this chapter, or through any combination of such approaches, as follows:

(1) *Translation*: Target language texts and tapes dealing with chemical engineering are converted into texts in a familiar language.

2) *Grammar and explanation*: The target language structures and vocabulary most frequently used in oral and written discourse on the restricted topic are extracted from representative texts and analyzed, then explained to the language learners. (If the analysis is in terms of surface features, a structural syllabus can be based on it and used in other approaches as well.)

(3) *Audiolingual method*: Dialogues or other short oral texts (e.g. parts of lectures) on chemical engineering are memorized, drilled, and perhaps role-played by the learners; the content of the oral practice is later repeated in the form of written exercises.

(4) *Situations*: Typical situations of the lecture room, the laboratory, the seminar or international conference, the industrial plant, and the office of an engineering firm are recreated in the language classroom.

(5) *Communication tasks*: Instruction is based on the processing of texts coming through the various channels relevant to studying, discussing, experimenting, promoting, and applying chemical engineering principles.

(6) *Functions and notions*: The basic concepts and typical speech acts which are needed for a person to function as chemical engineer (in any target language) are analyzed, and these particular notions and functions become the content of the language instruction in the target language concerned.

Apart from this restriction of content, which affects instructional materials but not methodology, a category such as 'language for special purposes' is not really necessary. In a sense, *all justifiable language instruction is for specific purposes*. The needs of the learners of any given target language (and even of an unspecified target language in the case of the discovery-oriented approach, 10.7.) must *always* be taken into consideration in order for the planners or engineers of language instruction to justify a specific program. No viable language syllabus can be developed without an assessment of learner needs (as well as school resources) for language instruction. Thus the category 'language for special (or specific) purposes' is no more tenable then the first three categories: 'first language', 'second language', and 'foreign language' instruction. The needs for all four types of learner population overlap too much to make the distinctions meaningful.

As we have just seen, the methodological approach to any 'special purpose' language course can run the gamut of approaches. And if we substitute 'structural' for 'audiolingual' in the list just given, it is also apparent that any 'special purpose' *syllabus* must actually be specified in terms of translation, grammar and explanation, structural items, situations, communication tasks, or functions and notions. And any evaluation of the results of a 'special purpose' program must involve achievement tests based on the same models. The methods, approaches, and materials actually used in the program are not necessarily confined to those suggested by the syllabus and the tests, but the program designers must select them from the same inventory (10.1.-10.6.). Currently the last three approaches (10.4.-10.6.) are the most popular with 'special purpose' program designers.

A summary of the methods and approaches for language instruction discussed in this chapter will help to illustrate this last point. The symbols used in the chart below are as follows.

T = Target language
O = Own (or other) language
X = Unknown target language
LA = 'Language Arts' instruction (Learners mainly T speakers)
SL = 'Second language' instruction
FL = 'First language' instruction
SP = 'Special purpose' instruction

R = Passive written channels
W = Active written channels
U = Passive oral channels
S = Active oral channels
NV= All non-verbal channels

Methodology Type	Preferred Media and Channels	Inputs of Relevance	Typical Learner Population	Correspondence Achievement Tests
1. Translation method	TR OW (TS OS)	Comparative grammar, Contrastive analysis	SL, FL (SP)	Easy to administer, many problems in scoring
2. Grammar and Explanation	TR and TS (O medium) Cognitive	Historical and prescriptive psychology (Descriptive grammar)	LA SL (FL)	Easy to administer and score
3. Audiolingual method	TU, TS, and NV (TR and TW)	Descriptive grammar, Behavioral psychology	SL, FL (SP)	Some problems in administering, relatively easy to score
4. Situational method	TU, TS, and NV (TR and TW)	Sociolinguistics, Text analysis	SL, SP (FL)	Difficult to administer and score
5. Communication tasks	All T channels (T medium)	Study skills Error Sociolinguistics	LA, SL, SP (FL)	Difficult to administer and score; proficiency test may substitute
6. Functional/notional approach	All T channels (T or O medium)	Universal grammar, cognitive psychology	SL, SP FL	Difficult to administer and score
7. Discovery-oriented approach	All X channels (O medium)	Aptitude testing, Universal grammar, Psycholinguistics, linguistic analysis	FL (SL)	Impossible to administer language achievement tests

As this summary shows, there is no necessary relation between learner populations and the methodology of language instruction. The selection of a particular method or approach depends on expected channel use, study skill requirements, and the importance of other considerations not directly related to language proficiency or communicative competence (e.g. ability to *explain* how the target language works as well as to use it). The degree of previous exposure to the target language, in the home, community, or school, is of course relevant, but not crucial to the selection of a particular approach, or combination of approaches, to a particular instructional sequence. As far as 'special purpose' instruction is concerned, although it is true that certain methods and approaches are currently favored by developers of such courses, it is also true that *all* language instruction must have restricted aims of one sort or another, and no viable language program is free of 'special purpose' constraints. Even the restriction of content characteristic of language instruction for 'specific purposes' is also found in many 'foreign language', 'second language', and even 'first language' courses.

CHAPTER 11

ENGINEERING PROBLEMS

11.1 Learning, teaching, and testing
11.2 Proficiency and cultural distance
11.3. Assessment of needs and resources
11.4. Language syllabus design
11.5. Aptitude, motivation, and opportunity
11.6. Instructional sequence
11.7. Contrastive analysis
11.8. Integrated curriculum development

In Chapter 4 the linguistic options in language and general curriculum were discussed, along with the constraints on media choice and implementation in various types of monolingual and bilingual education. Having considered the active and passive language skills in some detail, and having reviewed the possibilities for language instruction and testing, we are now in a position to make a fundamental distinction between language planning and language engineering in the school context.

Language planning is an activity not restricted to the educational field (see 12.8.). Insofar as school systems are concerned, however, language planning can take place only when the options in either language curriculum or general curriculum (or both) are still open. That is to say, the language planner can make contributions to media choice and to the objectives of language instruction at the national, provincial, or even local curriculum level, provided media choice and language curriculum have not already been fixed by policy-makers at those levels. Once such decisions have been taken, however, it becomes the duty of the language engineer to implement them, or at least to contribute to a team effort at implementation in the school system concerned.

Language engineering, then, implies taking the media chosen for general curriculum and the subject(s) chosen for language curriculum as 'given', and applying principles of linguistics, psycholinguistics, and sociolinguistics, along with the usual pedagogical principles, in working toward the solution of problems in the implementation of a particular curriculum policy. This is not to say that a language *planner* cannot also function as a language *engineer*, or vice versa -- in fact, such a dual role often occurs. The separation of the two roles is useful, however, because of the different range of possibilities open to the problem-solver as opposed to the policy planner. Language engineering, for example, must make the assumption that the language variety chosen as a school medium or language subject will not change its characteristics (through further standardization or development) during the implementation of the school programs concerned. The language planner, on the other hand, does not have to make this assumption.

The remainder of this chapter is concerned with questions of language engineering rather than of language planning in the school context. The sections represent a logical sequence often followed in the solution of typical engineering problems. The major stages in this sequence are assessment of needs and resources (11.3.), language syllabus design (11.4.), instructional sequence design (11.6), and integrated curriculum development (11.8.). Other sections review the necessary inputs to these engineering tasks.

11.1. Learning, teaching, and testing

The most important task of the language engineer is to serve the needs of both language and general curriculum through the design of language instruction. The demands of language curriculum, for the engineer, have already been defined through various achievement tests, at the international, national, provincial, or local levels, which students must pass as they progress through the school system or which they can be expected to face after leaving the school system. The needs of general curriculum have to be assessed in linguistic terms by the engineer himself (11.3.), and these needs will not always be compatible with the demands of language curriculum. The resources of the school, as far as language learning and acquisition are concerned, include not only available language teachers and existing instructional materials but also certain aspects of general curriculum, socialization, and individual development (Chapter 5). The design of actual language instruction sequences, therefore, must be broken down into a number of successive steps, no matter whether the instruction is for a single class of students or for an entire school system.

Before discussing the various stages in the solution of language engineering problems, it would be well to review the interrelationship of language learning (including language acquisition), teaching, and testing. As we have seen in Chapters 9 and 10, both language instruction and language testing involve identical stimulus-response combinations and have exactly the same range of channel-media combination possibilities. The only differences have to do with whether the stimulus is provided by a teacher, a set of instructional materials, or a test labelled as such. We can best show this relationship in an array which uses the section headings of Chapter 10.

Instruction	Test
1. Translation method	Translating and/or interpreting tasks
2. Grammar and explanation	Discrete-point grammar and/or vocabulary tests
3. Audiolingual method	Discrete-point or integrative tests of performance
4. Situational method	Role-playing, dialogue with examiner, etc.
5. Communication tasks	Structured responses to detailed stimuli in various channel combinations
6. Functional/notional approach	Problem-solving, study skills-related tests; integrative tests of competence
7. Discovery techniques	(No language test possible)
8. Language for special purposes	Any test of types 1-6.

When we come to examine the relation between unstructured language learning, or language acquisition, with structured language learning through exposure to teaching/learning strategies and instructional materials, we see that the only link is again through testing. The results of formal language instruction are normally assessed by achievement testing (9.6.), but the results of informal language learning and acquisition can only be assessed by proficiency testing (9.8.). Although the purposes of achievement and proficiency testing are quite different, the actual *forms* of the tests sometimes resemble each other quite closely, because the available stimulus-response combinations, in terms of channel, medium, and other variables (9.2.-9.4.), are basically the same for all kinds of language testing, and it is only the test *content* which is likely to differ appreciably. Thus language tests constitute a sort of bridge which ultimately links all the aspects of language acquisition, learning, and teaching that the language engineer must be concerned with. These relationships, so far, can be conceptualized as follows:

Language Acquisition Implies no language teacher, methodology, or instructional materials as such.		Language Learning Implies at least a set of instructional materials, and a learning strategy.		Language Teaching Implies at least a teacher and a methodology or teaching strategy.
↓				↓
Result: general proficiency (not always tested)	→	Language Tests	→	Goal: Specific achievement (usually tested)

Two observations need to be made about the above diagram, however. The first observation is that, although the stimulus/response combinations available for language teaching methodologies and instructional materials are identical with those used in testing, the materials and methods chosen for a particular instructional sequence *do not have to correspond* to those occurring on the achievement test for the same sequence. For example, if one of the aims of language learning or teaching is for students to be able to conduct business correspondence in English (a specific communication task), this does not mean that language instruction, in order to be consonant with this aim, must consist entirely of practice in reading and writing business letters. On the contrary, certain parts of the instructional sequence may be better conducted along audiolingual, situational, functional/notional, or even grammar-translation lines, and the instructional materials may include many software items which have nothing to do with business correspondence.

The second observation about the diagram shown above follows from the first. Since any instructional sequence or program will have more content in it than the corresponding achievement test (which only samples this content), language learning over and above what is tested can always take place, either by accident or by design. This additional language learning, though not to be tested immediately, may be designed to support subsequent stages of language curriculum, or general curriculum, or both. For example, in preparing students to pass the business correspondence achievement test of the preceding paragraph, the instructional program may also attempt to lay the groundwork for economics, literature, or English for Commerce later on, provided only the program designer or language engineer is aware of these subsequent instructional aims. If the additional language learning is accidental, rather than planned, its effect can still be measured in terms of proficiency gains, just as language acquisition by any other means can be so measured.

There is still another way in which language testing forms a bridge between language learning or acquisition and language teaching. It often happens, in schools and universities, that students must be enrolled in language instruction without having any previous records, in terms of achievement or proficiency, that the language engineer or program developer can rely on. If the instructional program has already been developed and sequenced, such students can simply be given a placement test (i.e. a set of achievement tests based on the successive stages of the program) and slotted into the program according to the results of the test. If the program has not yet been developed and sequenced, a general proficiency test will give the engineer a rough idea of what to expect in terms of target language which has been previously acquired by entrants to the course. But in any kind of actual syllabus design, or instructional sequence design, the program developer will probably also need to do *diagnostic testing* (8.7.) and he may even have to do *aptitude testing* (8.5.).

These observations reveal that there are certain elements missing in the diagram presented earlier. Language acquisition has no goals as such -- only results measurable in terms of proficiency. But some of these results may overlap with the goals of language teaching and learning. Similarly, instructional sequences with specific aims often produce results which will not be measured until later, through achievement tests based on subsequent instruction in language or general curriculum. We need, therefore, a further distinction: that between the language *syllabus* (the overall plan or blueprint for a given instructional sequence) and the language *curriculum* (defined by specific goals or achievement levels at various stages). Any language learning which takes place over and above the specification of the language syllabus, then, can be considered as language acquisition, and measured, if necessary, through proficiency testing.

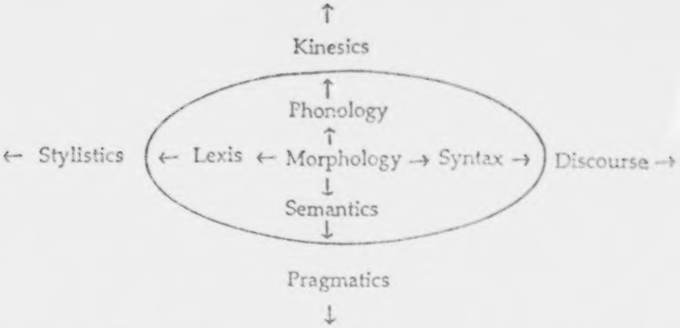
The syllabus, however specific it may be, still does not dictate a particular set of instructional materials, a particular kind of language teacher, or a particular teaching methodology. These may be suggested by the syllabus, but they are dictated primarily by the resources of the school where the actual instruction will take place, and by the characteristics of the students who will be instructed. A model which relates language learning, teaching, and testing, therefore, must have space in it not only for the syllabus, but also for the actual instructional sequence. Sections 11.3.-11.6. discuss the engineering problems involved in establishing the syllabus and the instructional sequences that follow from it.

11.2. **Proficiency and cultural distance**

At the end of Chapter 5 (5.8.), a formula for proficiency distance was given as follows: XPn - XPp. This distance, between the proficiency of the 'educated native speaker' (n) and that of the language learner (p), provides the only possible basis for measuring the effects of language acquisition or unplanned learning which takes place during a course of language instruction. At the end of Chapter 9 (9.8.), it was hypothesized that overall language proficiency itself (XP) is equivalent to active oral proficiency in the language variety concerned (XS), and that this gives us the means to measure overall language proficiency by factoring out such things as literacy (XL) and inferring ability (XI) with respect to the same language type, and therefore the means to apply such measures to native speakers and language learners alike.

The problem of the formula for proficiency distance, of course, is the definition of the 'educated native speaker'. The 'native speaker' part is difficult enough, but 'educated' implies that the speaker has successfully gone through some school system, and has consequently surmounted the hurdles not only of language and general curriculum of that school system but also of socialization and acculturation in a particular school. He may also have acquired certain kinds of individual experience and cognitive skills which were not acquired equally well by his fellow students. Whatever *study skills* he may have acquired, learned, or sharpened through the school experience, on the other hand, are not a problem in the measurement of language proficiency, because unless the application of the study skills has resulted in some strengthening of one of the components of language proficiency (phonology, lexis, syntax, or semantics) it will be irrelevant to the formula of linguistic distance cited above.

Much more difficult is the separation of sociolinguistic and cultural aspects of overall language proficiency from the strictly linguistic aspects, because any gain in communicative competence *does* have parallel effects on the components of language proficiency. In considering the relation of communicative competence to language competence as measured by performance (our definition of language proficiency), we repeat the analytical model presented earlier (5.5.), this time with a line separating the inner and outer rings of the model:



At the border formed by the ring in this model, the links between adjacent components are fairly obvious, for example:

Phonology:	Kinesics	--	paralinguistic features, 'tones of voice', etc.
Syntax:	Discourse	--	pronominalization, tense sequence, subordination, etc.
Lexis:	Stylistics	--	synonyms, 'registers', personal pronouns, kinship systems, modes of address, etc.
Semantics:	Pragmatics	--	perlocution and illocution, speech-act verbs and adverbs, etc.

These links can be interpreted to mean that any feature turning up in the outer circle of the model will also show up in one of the inner-circle components as well -- for example, that any 'stylistic' change will affect lexis, morphology, or syntax in some way, and that any gesture, facial expression, bodily stance, or proxemic relation will be reflected somewhere along the phonological/semantic (vertical) axis of the model.

But there are also links between the outer-circle components themselves, as implied by the arrows in the model. The close relation of kinesics and pragmatics, for example, can be convincingly demonstrated in any number of language varieties. The expression on the English speaker's face and the position of his arms, for example, when he delivers a standard invitation such as 'Won't you stay for tea?' provide more information about the nature of the speech act than could ever be conveyed through a written channel, or even a telephonic channel. The equally close relation of stylistic and discourse features can be similarly illustrated, in many languages, through the use and frequency of pronoun substitution, and in English through different ways of reporting speech, for example:

	A	B
'Won't you stay for tea?'	says	she
	said	the girl
	asked	Amy
	ventured	my new acquaintance
	growled	our host
	suggested	Bob
	lisped	the manager

In reporting the utterance, the items in columns A and B are interchangeable in the discourse sense (but not in the stylistic sense) and they can occur either in the syntactic order AB or BA (but not without affecting both style and discourse). The competence to use such nearly-equivalent devices effectively, appropriately, and in the right context certainly depends on a thorough knowledge of the culture in which the speech event occurs, whereas the mere awareness of the existence of all these patterns might be classified as linguistic competence.

We can reasonably assume, moreover, that our 'educated native speaker' of Language X who has gone through school in Language X and who has therefore been socialized and acculturated in an environment at least partly dominated by Language X is very likely to possess the same degree of communicative competence in Language X as he possesses language proficiency in it -- in other words, a perfect competence in both respects is a possible outcome of his experience. But even a perfect competence obviously can apply to only one culture and one society in which Language X is used, namely the culture and society of which the school is a part, and not to all cultures and societies in which there are majorities of speakers of Language X. That is to say, the pragmatic, stylistic, discourse, and kinesic 'rules' used by the educated Californian may be quite different from those used by his counterpart in London, Sydney, or Toronto, although the linguistic systems of the inner circle (semantic, lexical, syntactic, and phonological) may differ only in minor, superficial ways. The components of the outer circle must therefore be treated in a different way, if they are to be considered at all in formulas of distance.

These components of communicative competence, as a matter of fact, can be handled in a way which parallels the technique already used in the formulas for literacy distance (7.5.) and active-passive distance (8.8.). Just as the same spoken language variety can be written in different ways (e.g. Hindi and Urdu), it can also be used in different social and cultural contexts. Just as literacy (L) and the ability to infer (I) vary from language learner to language learner, so will familiarity with the culture concerned. Thus, in the same way that the mechanical difficulty (M) of any written language is a factor added on top of the difficulty inherent in the corresponding spoken language, we can consider the cultural difficulty of using the spoken language in a given cultural and social context to be a factor added on to both spoken and written language use.

Using the existing formula for proficiency distance, then, we can derive a similar formula for the gap which the learner must close in order to be as communicatively competent as the native speaker of Language X who has been educated, socialized, and acculturated entirely in some sociocultural milieu where Language X is dominant. Let us call this gap *cultural distance.*

If XC is the cultural difficulty associated with the use of Language X in a given community, and if XFp is the language learner's *familiarity* with the sociocultural parameters of that community, the formula then is as follows:

$$XPn + XC - XPp - XFp = \text{cultural distance for pupil (p)}$$

This some formula, of course, can be applied even to cultural distances experienced by native speakers of the language concerned. For example, an American college student attempting to understand Charles Dickens' accounts of life in England 100 years ago would encounter this kind of distance. In this case, the Dickensian cultural difficulty (ECd) is added to native speaker proficiency in English, and must be offset by the college student's familiarity with this culture if comprehension is to take place. To the extent that it is not offset, there is a distance:

$$\mathrm{CPn} + \mathrm{ECd} - \mathrm{EPn} - \mathrm{EFd} - \mathrm{EIn}$$

-- or, with the native proficiencies canceled out:

ECd - EFd - EIn = American student's cultural distance in hearing Dickens read aloud.

This formula implies that both the student's familiarity with Dickensian culture (EFd) and his inferencing ability as a native speaker (EIn) can be brought to bear on reducing the distance. The more he hears or reads about Dickens' world, of course, the greater the value of EFd will become; it is not a static value, but one that can be influenced by individual experience.

On the other hand, if the American college student attempts to *talk* the way Dickens' characters do, he will lose the advantage of CIn and the distance will be greater; namely, the basic cultural distances will occur here in its purest form:

ECd - EFd = American student's cultural distance in trying to sound like a Dickens character (or to look like one -- e.g. as an actor in a play)

As a final illustration of the effects of cultural distance, let us consider a situation in which *all* of the distances are involved. Suppose that a pupil who is *not* a native speaker of English is trying to *read* a novel written by Charles Dickens. Whether or not this pupil has help from a teacher or a set of instructional materials in attempting to interpret the written text, the essential gap he must close remains the same. Since the pupil's inferring skill, literacy, and cultural familiarity with the world of Dickens, as well as his basic proficiency in English are all involved here, the formula will be a very complex one, having seven terms in all:

EPn + EM + ECd - EPp - ELp - EFdp - EIp.

This is still not the most complex type of distance, however, that the language engineer or program developer must try to reduce through syllabus design, recommended teaching/learning strategies, and instructional materials. To the sort of formula exemplified above can be added also the factor of *language variety distance* (4.3.). If we replace the English of Dickens with that of Chaucer, or even with that of Shakespeare, historical distance will turn EPn into *EPn and EPp into *EPp, with the possibility of increasing the distance even further. Nevertheless, this would still be an example of a realistic distance, actually encountered in schools. In Singapore, for example, there are curricula which require non-native speakers of English to read plays by William Shakespeare in their original form. These curricula, moreover, carry the language designation 'English'.

11.3. Assessment of needs and resources

A language syllabus is an overall blueprint or plan for a given sequence of language instruction. Language syllabuses are seldom designed for very small populations of language learners, but are usually meant to apply to programs involving large numbers of students widely distributed in terms of school location, individual characteristics, and learning conditions (and often in terms of time as well, since a given syllabus may remain in effect for any number of years). This means that the language engineer, in making his contributions to syllabus design, must think in terms of the *typical* needs of the learners affected by the syllabus and the *typical* resources of the schools or school systems that are to implement the syllabus. Thus the assessment of needs and resources becomes the first step in the design of a viable language syllabus.

Obviously, needs and resources assessment of some kind may already have been done during the design of syllabuses relating to general curriculum for the same school and learner populations for which language syllabuses are to be designed. If so, this information is immediately useful to the language engineer because, as we have seen, the resources of general curriculum have a direct bearing on the acquisition of language proficiency and communicative competence in the school language varieties, and the needs of general curriculum automatically become part of the needs of language learners. But our concerns here are more specific, namely: (a) What particular needs of typical language learners can be expected to be met through successful attainment of the goals of the language syllabus? (b) what particular resources of the typical school can be utilized in implementing the syllabus?

The language learning *needs* of students can of course always be expressed in terms of linguistic and cultural distances. But this means that, in assessing needs, *both* terms of the relevant formulas for channel, literacy, active-passive, proficiency, and cultural distances must be established. Many language syllabus designers, in the past and more recently, have used the term 'needs assessment' to refer only to required terminal behavior or competence of the learners. But the characteristics of learners on entrance to the proposed program also must be taken into consideration if an optimal syllabus is to be designed for the program.

The class or school norms for achievement or proficiency at the entrance level -- i.e. at the point where the syllabus begins to serve as a blueprint for language instruction -- can usually be obtained from school records and especially from achievement test scores. But for primary schools where the new intake of pupils has no previous academic record, and for higher schools where the new intake of students comes from many different academic institutions, diagnostic or proficiency tests may have to be administered to obtain this information. In cases where the language aptitude of the entire learner population is suspected to be above or below the normal range, aptitude testing may also be an advisable step for the language engineer before syllabus design begins.

Since the language engineer is quite often not in a position to administer language tests of any kind to the entire population affected by the new syllabus, he must however, often use sampling techniques to establish the proficiency, achievement, or aptitude levels of the students entering the program. If the language curriculum requires communicative competence as well as language skills, some similar assessment of the prospective students' familiarity with the culture concerned must also be obtained.

Once the entrance levels of the learner population (and perhaps also the aptitude range) have been established through mass testing or sampling, or from school records, the other terms in the relevant formulas of distance can then be considered. These other terms become the *goals* of the program of language instruction, and therefore also of the language syllabus. In other words, they put limits to the distances that the *typical* student is expected to traverse during the program of instruction corresponding to the syllabus. These goals, of course, can be stated in absolute terms, but the principle of relative attainability of the syllabus (see 11.4.) dictates that the goals will be constrained, to a greater or lesser extent, by entrance and aptitude levels.

Language learning needs interpreted as linguistic distances to be reduced can thus be represented as follows:
Language learning goals - entrance levels = distances to be bridged (Distances may be greater for high-aptitude populations, smaller for low-aptitude ones. The syllabus may specifically allow for this possibility.)

The language learning goals which can be addressed by the language syllabus are of three general types:

(1) The goals as defined by the tests and examinations of language curriculum itself;
(2) The goals as suggested by the immediate requirements of general curriculum;
(3) The goals as anticipated from a study of the curriculum (both language and general) at a much later stage of education, or from an

assessment of the typical language requirements of students after they have left the school entirely.

In general, the first set of goals will have the highest priority, the second set will be accommodated if at all possible, and the third set is often in the nature of a luxury. Another way of putting this is to say that the language engineer must always plan the syllabus in such a way that even the poorest student will have a shot at the goals dictated by language curriculum, the average student can expect to have his general curriculum needs attended to, and the best students may have some of their future language needs fulfilled as well. (It is not always that simple, however -- see 12.5.)

The relative difficulty of identifying goals also normally follows this order. The language achievement tests or examinations which students will face after each instructional sequence usually give clear indication as to what content the syllabus must emphasize at each stage. If there are no formal tests or examinations, the stated objectives or the recommended instructional materials and/or methods of the language curriculum provide the same kind of information. The requirements of general curriculum, on the other hand, are more difficult to assess. Not only must language skills be separated from study skills in some way, but the assessment optimally involves text analysis of the instructional materials and classroom interaction with general teachers as well, with diagnostic (or proficiency) testing being used to determine the particular channel distances which most urgently need closing at that stage of schooling. The future needs of language learners, in further education or after leaving school for good, are the most difficult of all to assess, because students will be dispersing in many different academic, vocational, and purely personal directions at this stage.

The language learning/teaching *resources* which must be considered in designing the syllabus also fall into three general categories:

(1) The resources of the school or school system in terms of language teachers typically available for language instruction *at the relevant level;*

(2) The instructional aids and materials, both hardware and software, which schools are likely to have already, or which can easily be provided to all schools using the syllabus;

(3) The other resources of the typical school, including opportunities for acquiring *the same target language* from general teachers, instructional materials of general curriculum, reference and other materials provided by the school for individual use, from socialization, extracurricular activities, and school-sponsored community contacts.

The resources of the school are listed above in relative order of importance, with the language teachers naturally coming first. This means that the language engineer, in helping to design the syllabus, must give first priority to making sure that the syllabus is 'teachable' (or manageable) by the typical teacher in the school system at that level. In many primary systems, for example, it may be the general teacher with no training in the language specialty who must give or manage the actual language instruction. Second priority goes to the available instructional aids and materials, because no matter how sophisticated the hardware and software provided by the school, the teacher must still manage the instruction in some way. The last priority goes to the other resources of the school, for obvious reasons -- the principal reason being that neither the language engineer nor the language teacher can exert effective control over these resources. This low priority, however, does not downgrade the usefulness of these other resources in certain special situations.

The assessment of teacher resources is also the most complicated type of assessment. There are three main characteristics of teachers which make up the profile of a typical language teacher at a given instructional level, listed in order of importance:

(a) The language proficiency and communicative competence of teachers with regard to the target language;

(b) The previous training of teachers with regard to language teaching methodology, classroom management techniques, and related skills;

(c) The attitudes of teachers toward the target language, and their motivation for teaching it.

The assessment of the language proficiency and communicative competence of teachers, and of their attitudes and motivation with regard to a given language variety, is no different in principle from the assessment of similar characteristics of students. The best information is obtained through standardized tests and carefully designed research, but more informal questionnaires, self-rating scales, interviews, observations, and other survey methods are also useful. Administering standardized language proficiency tests to large numbers of teachers in a school system can be difficult, costly, or simply inadvisable. Reliance on teachers' own academic records for this kind of information is not advisable either, because individual language proficiency may have changed drastically (for better or for worse) since the teachers ceased to be students.

The best method for obtaining information on teachers' language proficiency and communicative competence, when mass testing and sampling have been ruled out, is often to design a self-assessment scale, from which the tryout results are cross-checked with a random sample of data obtained by other methods (e.g. interviews). The self-assessment scale can then be conveniently combined with a questionnaire designed to seek information on attitudes toward the target language and the motivation of teachers for conducting instructional programs in it.

Information on the previous language teaching methodology training of teachers is somewhat easier to obtain, but tends to be somewhat unreliable in cases where the training took place a long time ago, so that information on this subject may also need to be elicited through survey techniques. Records of in-service and pre-service teacher training programs and university courses attended by younger teachers are usually quite reliable, but older teachers who have been teaching language for many years may have forgotten much of the methodology training they originally received, and of course may have improved on it through experience or originated individual methods which have nothing to do with the training. Questionnaires administered to all language teachers, or to a representative sample of teachers, should therefore include items concerning methodological capabilities and preferences, in order to ensure that the profile of the typical teacher in the system is reasonably accurate.

The resources of the typical school in terms of instructional aids and materials are the next most important area for assessment. In highly centralized school systems, where small numbers of textbooks are prescribed or textbook loan schemes are in effect, this is a relatively simple matter. Individual schools in centralized systems are not apt to differ very much with regard to the types of software and hardware they have at their disposal. A simple questionnaire sent to school administrators or language department heads will usually suffice to elicit the desired information on what supplementary aids and materials, over and above the usual core materials, the schools are likely to have.

In school systems where the choice of basic instructional materials and hardware is left to the individual teacher, the department, or the school, the assessment of resources becomes less important. The main constraint is then the cost of materials and aids. The language engineer or program developer has the task of recommending a suitable range of inexpensive materials that can be used in implementing the syllabus after it has been developed. The assessment of hardware resources is likewise a relatively simple matter. A given school either does or does not have language laboratory equipment, projectors, slotboards, televisions and radio facilities, and so forth, and it is almost never within the power of that language engineer to provide such equipment when it is lacking.

Some types of auxiliary software -- i.e. instructional materials other than basic textbooks -- can often be provided, on the other hand, even though no school in the system already possesses them. It is often feasible, as a new syllabus is being designed, to develop auxiliary materials around it: for example, teacher's guides, resource kits, audiovisual aids, and prototype student materials of various kinds. The actual production of these materials can take place in curriculum development centers, if the school system has such centers, or can be left to private publishers. In the latter case, private publishers are an additional resource for the engineer to consider -- those who already have language textbooks on the market may be eager to come out with the desired types of supplementary materials keyed to their basic textbooks, or even to revise the textbooks, as a means of increasing their sales.

The last category of school resources which must be assessed includes those resources, apart from language teachers and instructional aids and materials, which afford students opportunities to acquire the target language within the school. Such opportunities occur in the four communicative contexts previously noted (5.2.): (a) pupils with general teachers; (b) pupils with peers; (c) pupils with general subject instructional materials; and (d) pupils with other stimuli provided by the school. Since contexts (a) and (c) will already have been covered in terms of *needs* assessment (these being the precise contexts where needs and resources intersect), the information to be obtained concerns only contexts (b) and (d). Again, survey techniques will be applicable -- questionnaires, interviews, or structured observations. The scope of reference materials, written in the target language and available in school libraries, and other resources such as laboratories, recreational facilities, visitors to the school, and field trips away from the school are also important insofar as they involve potential target language use. The patterns of socialization outside the classroom, and the language varieties used for interaction among the pupils themselves can be ascertained through questionnaires, selective observation, or similar survey techniques. In some types of schools this kind of information can be invaluable in designing a language syllabus.

In summary, both the needs and the resources that relate to a given language syllabus and its design have certain things in common, and the assessment should be carried out simultaneously by the language engineer if at all possible. The shared characteristics of the two kinds of assessment are the following:

(1) The *typical* school, teacher, and student is the subject of assessment; not the individual example.
(2) The language curriculum, general curriculum, and non-curricular aspects of the school all have to be considered.
(3) Some aspects of the school, and in particular its general curriculum, can be viewed either as needs or as resources, depending on the timing and arrangement of other variables in the assessment.

11.4. Language syllabus design

The raison d'etre of the language syllabus has nowhere been more elegantly or economically stated than by Mackey (1965): 'Both the [language instruction] method and the teaching techniques which it requires can be judged only in the light of the objectives which they are supposed to meet. These are found in the syllabus'. In other words, no evaluation of language instructional sequences is possible without a syllabus to refer to, and this syllabus must be established *before* and not after the language instruction takes place. Otherwise, a language achievement test (or other assessment by those responsible for the instructional program) becomes just a way of measuring what *was* taught or learned. Similarly, a language achievement test which samples what was supposed to be learned cannot be designed in advance without a blueprint to refer to, just as a language instruction program cannot be designed to meet a set of educational objectives until these objectives have been identified by someone and then translated into language-specific terms.

Language instruction, language testing, and language curriculum are all possible without a language syllabus. For example, not all of the externally-administered tests and examinations that define language curricula in various parts of the world are achievement tests; many are language proficiency tests, some are measures of communicative competence, and some are simply tests of the degree of mastery of study skills, or even of verbal experience and/or cognitive skills. It is always possible to conduct an instructional program which purports to advance language learners toward such goals without having any definite syllabus to work from.

It is only the *evaluation* of language instruction through genuine achievement testing that is not possible without a language syllabus. Otherwise, any program that adds a few points to the mean proficiency scores of the learners who undergo it can claim to be a successful program, whether or not the same gains could have been achieved more quickly and economically in some other way. But the existence of a language syllabus does not necessarily mean that there will be instructional programs based on it, or even that achievement tests will be designed by sampling from it. A language syllabus can be specified for the guidance of those in charge of language testing even when no instructional program is to precede the testing. Or a language syllabus can be used to plan both instructional sequences and diagnostic or achievement testing. In fact all the possible combinations of language learning, teaching, and testing (11.1.) occur in connection with the language syllabus in various school situations:

(a) Language testing without a syllabus or a teaching program
(b) Language instruction without a syllabus or any tests
(c) Language syllabus without any teaching or tests (e.g. an optional language subject not yet offered by the school)
(d) Language instruction and tests without a syllabus
(e) A language syllabus without a teaching program (e.g. for self-instruction and testing purposes)
(f) A language syllabus without achievement testing (e.g. for self-instruction and teaching purposes)

(g) A language syllabus having both teaching programs and achievement tests associated with it.

Our main concern is with the last combination (g), which is by far the most typical for well-designed programs in schools. Once the needs and resources assessments have been completed (11.3.), the next logical step is the design of the syllabus. The resulting syllabus will in turn become the blueprint for instructional sequences, and at least some parts of it will correspond to the content of actual language examinations associated with the language curriculum; in the case where the language engineer determines the content of language curriculum, the syllabus also becomes the blueprint for achievement testing. Thus an understanding of the relation of the syllabus to both achievement testing and to instructional sequences will automatically cover its relation to these components separately (combinations *e* and *f* above).

What are the general characteristics of the language syllabus which should be considered? These again have been identified by Mackey (1965), who lists four kinds of questions that ought to be asked about any language syllabus: questions relating to its (1) content, (2) specification, (3) justification, and (4) attainability. Let us look at each of these aspects of the syllabus in turn, slightly modifying Mackey's terminology to suit the concept of language engineering and the practical problems associated with engineering.

The language syllabus *content* is largely determined by the needs assessment, which will show what kinds of linguistic (and/or cultural) distances need to be reduced. These needs can be interpreted in a number of different ways: (a) as skills needs, requiring different kinds of emphasis on listening, speaking, reading, writing, interpreting, and translating; (b) as needs for control of certain formal or surface items, such as pronunciation (and/or spelling), vocabulary, and grammar; or (c) as needs for the control of certain functions and notions, the content of the syllabus to be determined on an integrative basis. The linguistic distances to be closed may then be thought of as channel, literacy, active/passive, proficiency, or cultural distances. Regardless of how the needs are interpreted, a minimum-to-maximum content, and a logical sequencing of this content will be established for the syllabus. Both the content and the sequence can then be expressed in linguistic terms.

At this point, it becomes apparent that the best possible ways of expressing language syllabus content correspond exactly with the major methodology types of language instruction discussed in Chapter 10 (10.1.- 10.6.). That is, syllabus content can be expressed in terms of the following approaches, or any combination of such approaches:

(1) Translation: the syllabus specifies the texts to be translated
(2) Grammar and explanation (traditional, structural, or generative)
(3) Audiolingual texts (and their written representations) in the target language only
(4) Situations of target language use
(5) Communication tasks involving the target language
(6) Functions and notions to be expressed in the target language
(7) Techniques of language rule discovery (not a language syllabus)
(8) A limited corpus expressed in any of the ways (1) - (6).

In addition, as we have seen, the first six of these ways of expressing syllabus content can also serve as bases for constructing achievement tests, with some of the categories lending themselves better to this purpose than others (10.8., end).

Mackey's second set of questions, concerning the *specification* of syllabus content, can be broken down into three major questions:

(a) What are the possible ways of specifying a syllabus?
(b) How specific are existing language syllabuses?
(c) How specific should the ideal language syllabus be?

We have already answered the first question (a), because any syllabus specified in linguistic terms is bound to be either a variation on one of the basic content types listed above, or a combination of these types. For example, a syllabus which seeks only to close the literacy distance in Language X (XT + XM - XPc - XLc) would have to be expressed in terms of types (3) or (5). A syllabus for English for Hotel Staff would involve a combination of type (8) with almost any other content type -- (4) - (6) being the most likely candidates. This follows logically from the premise that whatever is to be taught or learned (the language syllabus content) should be taught or learned according to some strategy or methodology which is already known to be effective, and not simply according to some theoretical assumption about language learning.

The question 'How specific are existing language syllabuses?' is also easy to answer. The observed range of specificity of language syllabuses throughout the world runs from near zero (e.g. in vernacular language curriculum in the early primary grades) to cases of extreme detail (e.g. the 'second language' structural syllabuses for use in primary and secondary schools in Malaysia, which combine types (2) - (4) above in a sequential way). In general, however, 'language for special purposes' syllabuses tend to be much more specific than syllabuses for language instruction which simply bear the name of the language variety concerned: e.g. 'Intermediate Spanish'.

The answer to the third question, 'How specific should the ideal language syllabus be?' is the most difficult to answer. Noss and Rodgers (1976:62-4) use a comparison with a motor vehicle driver's 'syllabus' in attempting to answer it. The four variables they cite are the following:

(i) How much is actually known by specialists about the content to be learned, and how stable is that knowledge?

(ii) How sophisticated are the prospective learners and teachers who must deal with the syllabus?

(iii) What are the possibilities for supervision, pre-service and in-service training of teachers, and of follow-up in the field?

(iv) For a syllabus designed for self-study, what are the opportunities for counseling the learner as he progresses?

The last three of these variables can be accounted for in a thorough assessment of needs and resources (10.3.). The first variable becomes the major concern of the language engineer in designing the syllabus.

In the case where the target language is undergoing rapid change or standardization, or where complete descriptions of the target language are unavoidable, the specification of the linguistic forms to be learned may constitute a genuine problem. But even in the more usual case, where complete descriptions of a stable target language are available to the language engineer, there may still be problems. As we have seen, any viable program of language instruction is for 'special purposes' -- that is, the content is restricted by considerations which are not the language engineer's alone. Just as driving instructors do not set the criteria by which people become eligible to drive a motor vehicle in a given state or nation, language instructors do not set the criteria on which their efforts at language instruction are to be judged. Thus in specifying the content of a language syllabus of any but the most elementary type, the language engineer must consult the educational administrator, and quite often also the technical specialist, in order to make sure that the content actually matches the needs as identified.

Mackey's third set of questions, regarding *justification* of the language syllabus, can be broken down in a similar way:

(a) What are the possible ways of justifying a language syllabus?

(b) How are existing language syllabuses normally justified?

(c) What are the exact criteria by which one decides whether a given language syllabus is justifiable or not?

The first question can be answered in either economic or ideal terms. At one extreme, any language syllabus is automatically justified as soon as the educational authority approves it and appropriates the money necessary for its implementation -- for example, by providing budgets and time schedules for teaching, materials development, or examinations. In other words, the syllabus is economically justifiable because responsible authority is willing to commit time, money, and other resources to it. At the other extreme, any language syllabus is justifiable to the extent that it corresponds with learners' language needs, regardless of the expense or time-period required. (This is essentially the view that the language planner, rather than the language engineer, must advocate.)

As to the second question, in actual practice many language syllabuses are justified simply on the basis that the school already has the resources for the corresponding language program. The teachers have been trained, the textbooks have been bought or handed down from previous generations of students, the equipment is in place, and there will be a hole in the timetable if the language course is not offered; therefore, some language syllabus or other is justified. In a sense, this is also a kind of economic justification, since the resources (whether traditional or not) represent a kind of commitment from the educational authority, who can scrap the program at any time they so desire. Normally, it is only *new* language syllabuses that have to be justified, in more or less ideal terms, to gain approval.

The answer to the last question, 'What are the exact criteria by which one decides whether a given syllabus is justifiable or not?' depends not only on needs assessment but also on resources assessment. This is the language engineer's answer (but not necessarily that of the language planner). In general, if the syllabus content specification matches the needs of the majority of the students concerned, and if the syllabus is teachable or learnable given the typical resources of the school system concerned, then it is already justifiable in ideal terms. But only trials or experimental implementation can make this kind of theoretical justification stand up. The evaluator must ask not only 'Does the syllabus work?' but also 'Does it work better than other possible alternatives?' Only when this second question is answered in positive terms can the syllabus be said to be really justified.

Regardless of content, specificity, and justifiability, every language syllabus must obviously be *attainable* -- that is to say, the typical student who is free from physical, mental, and emotional handicaps should be able to meet certain criteria, which can be assessed through achievement testing, after he has undergone the instructional sequence corresponding to the language syllabus. But Mackey's last set of questions, concerning attainability, can be interpreted as implying other evaluative aspects as well. A syllabus which has not been accurately specified, in terms of objectives and content, is in one sense unattainable. For example, does the objective 'ability to conduct business correspondence' refer to old-fashioned business letters or to modern communication via telegram, telex, etc.? Unless the syllabus designer makes this specification clear, there may be no way to determine whether the objective has been attained or not.

Apart from such cases, the language engineer needs to be primarily concerned with *relative attainability* of the syllabus. Granted that any type of language syllabus (first language, second language, foreign language or 'special purpose') ought to be attainable in absolute terms, given sufficient time, opportunity, and motivation for the learners, is the time allotted for the instructional program that goes with the syllabus enough so that the typical learner will achieve most of its objectives? If the time is too short (or, in the exceptional case, too long), then the syllabus has too much (or too little) in it, and different decisions about content are indicated. The relative attainability of the language syllabus, then, is the one area in which the language program designer or engineer has nobody but himself to blame if things go wrong. Provided only he gets help in adequately specifying the objectives and content of an absolutely justifiable syllabus, its relative attainability is up to him to assess.

To summarize this section, the ideal language syllabus, from the point view of the language engineer, is a set of justifiable, attainable educational objectives specified in terms of linguistic content. This linguistic content, furthermore, must be teachable or learnable by following some established strategy or methodology, and it must be testable according to established techniques of language achievement testing. The design of the language syllabus is the second task of the language engineer, and it presupposes that he has himself conducted, or is satisfied with the results of, the first task, which is the assessment of needs and resources (11.3.).

From the point of view of the language planner, as opposed to that of the engineer or program implementer, all four sets of questions -- concerning content, specificity, justifiability, and attainability of the language syllabus -- can be approached in a different way, because the planner can make changes in language curricula, budgets, and time allocations for language instruction. He can increase resources and redefine needs or objectives. But the language engineer is always constrained by existing needs and resources, existing language and general curricula, and existing budgets and time-frames in designing a given language syllabus. He must always think in terms of the typical school and the typical learner to which the language syllabus applies.

11.5. Aptitudes, motivation, and opportunity

The language syllabus is designed to provide maximum opportunity for the typical student in the typical school to reduce the linguistic distances which are relevant to his progress in language and general curriculum at some stage of education. But neither all schools nor all students affected by a given language syllabus are 'typical', in the sense of being close to the norm, and there may be a wide range of variation in students, teachers, instructional materials, and other resources of schools in the same school system. This range of variation is also subject to engineering, but not at the level of the syllabus. The third task of the language engineer, after the syllabus design, is in fact to identify *a range of opportunities,* within the general constraints imposed by the syllabus, to suit different kinds of students, teachers, and schools.

As far as the language *learner* is concerned, there are only two other major variables besides the quality and quantity of language learning opportunity provided to him by the school: These are his individual *motivation* and his individual language *aptitude.* The second variable can be measured through aptitude testing if the relevant instruments exist, and may be a normal component of needs assessment (11.3.). But there is nothing that the language engineer can do about language aptitude on an *individual* basis -- that is, it constitutes a 'given' for each and every student in the program. Group aptitude scores, on the other hand, wherever they are appreciably higher or lower than the expected norms (as established by mass testing or sampling of the population, or simply as predicted from general patterns of achievement), can be utilized in recommending different instructional treatments. If a whole class, for example, is thought to consist of 'slow' or 'fast' language learners, obviously this will affect the choice of teaching method and materials as well as the overall pace of the instructional program.

The point to be emphasized here is that the use of other criteria, such as intelligence quotients or general academic performance, in place of aptitude testing is never to be encouraged by the language engineer. There are far too many examples, all over the world, of schools and teachers who preclassify or 'stream' language students according to faulty criteria; such prophecies, moreover, tend to become self-fulfilling because of teacher attitudes toward 'slow' and 'fast' learners generally. Even when language aptitude scores are available, it is often still advisable, as a matter of fact, to mix students of different aptitude levels in the same class in order to take advantage of peer teaching possibilities. The proper use of aptitude measures, in situations where all members of the student population must undergo the same program of language instruction in any case and there are no options or elections involved, usually comes in the recommendation of teaching/learning strategies and materials, seldom in streaming or assigning students to separate classes.

The second major variable for language learners, along with aptitude, is *motivation*. We have chosen to include what are usually called *attitudes* (toward language varieties and the cultures associated with them) under this heading also. Although attitude and motivation may be psychologically and sociologically different concepts, their effects on language learning are virtually inseparable. In other words, any pre-existing or changed attitude toward a given language variety or culture will show up eventually as a motivational factor in language learning (and probably vice versa); the existence of motivational factors or changes in them can be identified through various survey techniques in the same way that attitudinal data can be collected.

Both motivation and attitudes, moreover, unlike language aptitude, are subject to change through engineering. That is, the behavior of teachers, the nature of the instructional materials, and the teaching/ learning strategies can all affect both the attitudes and the motivation of individual learners and groups of learners. Motivation is chosen as the major variable because it is the broader concept, and is entirely parallel to language aptitude and language learning opportunity in the context of the syllabus and the instructional sequences that derive from it.

Motivation for language learning has traditionally been considered to be of two principal types: (a) integrative and (b) instrumental. *Integrative* motivation essentially means that individual willingness to learn a particular language variety correlates well with individual admiration for the society that speaks the language or for the culture that is associated with it. In terms of our formulas, if the pupil (p) wants to close the cultural distance (11.2.) represented by the formula $XPn + XCn - XPp - XFp$ because he likes what is symbolized by $XPn + XCn$, then his motivation is integrative. This formula also makes it possible to explain why integrative motivation can operate even within the same language variety -- that is, when XPn

is not a factor. When an American speaker of English makes an effort to sound like a British speaker, for example, he may be making this effort to reduce the cultural distances XCb - XFb because he likes the British version (XCb) better than his own American version (XCa) of the culture associated with the English language. Integrative motivation, then, is very closely tied up with what are called *attitudes* toward language varieties (languages and dialects).

The other traditional type of motivation is called *instrumental*. This term essentially implies that individual motivation for learning a particular language variety correlates well with an individual desire to obtain something through its use. The most common interpretation (or proof) of instrumental motivation is associated with occupational and economic goals -- e.g. job opportunities, professional advancement, salary increases, and the like. To use the example just cited, the American may want to sound British, not because he admires British culture, but in order to be hired by a certain firm or land a part in a certain play; if so, his motivation is instrumental. The same kind of motivation is of course very common among individuals learning entirely different languages, especially the 'world' languages which are associated with high-paying jobs and prestigious professions.

But instrumental motivation can also operate where no immediate financial or professional rewards are evident. In schools particularly, students may want to acquire the language of inter-group communication in order to socialize better, or to pursue some other language for purely personal reasons. A student may wish to learn Japanese, for example, not because he admires the Japanese or can get a better job with a knowledge of it, but because he is interested in Kabuki plays, flower arrangement, or Oriental carpentry. Instrumental motivation, then, can be associated not only with monetary rewards and occupational satisfaction but also with socialization, and with life-enrichment goals such as hobbies and individual areas of interest.

The two traditional categories of language learning motivation obviously do not account for all such motivation. In schools, there are at least three other ways in

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which students can be stimulated to learn *a particular* language variety or to acquire an aversion toward learning it: (c) the intrinsic motivating force of the language curriculum itself (or of the medium of general curriculum); (d) like or dislike for a particular language teacher or teachers; and (e) like or dislike for the instructional sequences in which the language is presented (but not for the language teacher or the language itself). Let us consider these additional types of motivation, all of which are ultimately tied up with attitudes toward languages or pedagogical strategies.

The intrinsic motivation of the language curriculum itself (c) can be interpreted simply as the desire to get good marks in language courses, to pass language examinations, or otherwise satisfy the language requirements of the school. This type of motivation has often been discounted, on the grounds that it is a constant, and not a variable in the same sense as instrumental and integrative motivation (a and b) are. The argument runs that since all students in the school (or school system) are subject to the same grading schemes, examinations, and other language requirements, the motivation must exist to an equal degree for all students. This position, however, ignores the educational strategies open to students in many school situations. Where marks are averaged, for example, a student may decide to concentrate on mathematics and let the language subject slide (or vice versa) for a number of different reasons. With only average language aptitude and low mathematical aptitude, a student may decide to devote his energies to either of the two subjects, and the result of his decision will show up as either high or low motivation for language learning, and so forth. This is quite different from the motivation provided by the general curriculum for learning the language which is the medium of instruction for general subjects. This latter motivation can be classified as truly instrumental. But the motivation provided by the language curriculum, or the language subject, must be considered as a separate type of variable.

Like or dislike for a particular teacher (d) is obviously a motivating force, especially at the beginning stages of language instruction and for very young learners. This is a variable which affects motivation in all subjects, of course, and not only in language subjects. In either case this type of motivation (or lack of it) can usually be classified as a special case of integrative motivation, because the teacher who speaks the target language or uses an unfamiliar language as a medium of instruction in the classroom may represent the student's earliest (or only) contact with speakers of the language concerned. (If the target language or medium of instruction is a familiar one, of course, teachers have less effect on the image of the culture represented by the language.)

The language teacher often represents the culture associated with the target language in another way: Until such time as the student is able to read, on his own, literature written in the target language, whatever integrative motivation he may feel may come entirely from language teachers and instructional materials. Thus a teacher who is liked may contribute to high integrative motivation of beginning students, especially young ones, while a teacher who is disliked may contribute to low motivation, and this motivational set may easily by carried over into subsequent stages of learning the same target language. (The attitudes of teachers themselves toward school language varieties, however, is another matter, and constitutes a variable which shows up in the next type of motivation.)

Like or dislike for the instructional sequences themselves (e) is undeniably a motivating force in learning any subject, including language subjects. A boring language lesson, naturally, is demotivating, just as an exciting one can be motivating. It is here that the teacher's own attitude toward the target language may be one of the most crucial factors. A language teacher who dislikes her subject will very quickly convey this dislike to her pupils, and one way of doing this is to make the lessons boring or unpleasant for all concerned. Conversely, the language teacher who likes her subject, whether or not she is otherwise popular with her students, can motivate them simply by demonstrating, through the instructional sequences, that learning the language can be pleasant or at least challenging.

Different styles of presentation of the material to be learned, however, do not have uniform effects on all language students alike. What excites one student may bore another. The abstract intellectual exercise involved in learning a new language may appeal to some, the specific activities to others, and the incidental content of the language lessons to still others. The pupil who dreads oral performance in front of the whole class may enjoy individual written exercises, and so forth. The total process of language learning may serve to motivate some students who have no conceivable instrumental or integrative motivation for learning the particular target language, and who are under no parental pressure to do so. In America, for example, there are farmer's children who have *elected* to take four successive years of high school Latin, under teachers with very different personalities, even when the language curriculum did not require them to take any Latin at all. The only possible explanation for this kind of motivation (and also for its converse) is love of the way Latin was taught in the school. And this source of motivation, as it happens, is one of the most easily engineered.

Looking at the various types of motivation for language learning, in fact, we can see that some involve variables subject to engineering and some do not. Let us summarize as follows:

Type of motivation instruction by:	Can be affected through language engineering
(a) Integrative	Teacher's personality, instructional materials
(b) Instrumental	Not at all (or only through changes in general curriculum)
(c) Intrinsic (for required subjects in the curriculum)	By making students see relevance of instruction to the requirements--that is, that the lessons will actually help them to pass examinations
(d) Liking of individual	Through teacher's assignments, classroom management strategy, team teaching, etc.

(e)	Liking of instructional sequences	By providing as wide a variety of sequences as possible.

In the design of instructional sequences to implement any language syllabus (11.6.), the opportunities for language learning are a variable entirely under the control of the language engineer or program designer. General constraints imposed by typical school resources have already been taken into consideration during the design of the syllabus. Individual language aptitude is a variable that cannot be catered for, but the aptitude of *groups* of students within the population is subject to engineering decisions. Most kinds of motivation, except instrumental motivation, can be affected to some extent by decisions during the design of the instructional sequences themselves, in the assignment of teaching duties, and through briefing students and teachers on the rationale of the syllabus.

It could be argued, of course, that even instrumental motivation is subject to engineering. That is, the instructional program might constantly emphasize the uses to which the target language could be put in various occupations and in post-educational life generally. The problem is that such emphasis is often counter-productive -- if the instrumental motivation is not present in the learner to begin with, emphasis on the utilitarian aspects of the language subject may only serve to convince the learner that he is being sold a bill of goods, and even to destroy his other possible sources of motivation by casting suspicion on the aims of the whole program.

The relationship of aptitude, motivation, and opportunity is further explored in the next section, but the final point to be made here is that the relationship among the three variables is probably a multiplicative one, rather than a simple additive one, something like the following:

Aptitude x Motivation x Opportunity = Rate of Language Learning.

The precise weighting of the terms to be multiplied, of course, is probably not as simple as this formula implies, and can only be established for a single instructional situation through carefully controlled research; it is doubtful whether a universally applicable weighting for the terms could be established in any case. The formula is merely intended to assert that any increase or decrease in motivation and the quantity and quality of language learning opportunity will proportionately affect the rate at which the content of a new syllabus is learned. The language aptitude of the individual learner is also an equivalent factor here, but not one which is subject to engineering.

If the language syllabus is *relatively* attainable for the typical student (11.4., end), these observations mean that any measures to increase motivation and opportunity which can be built into the instructional sequences will have the automatic result that a larger percentage of the learner population can meet the minimum achievement criteria envisioned by the syllabus.

11.6. **Instructional sequence design**

The language engineer's first task is to make assessments of learner needs and school resources (11.3.). His second is to design a syllabus (11.4.) based on these needs and resources which will provide the majority of the students undergoing language instruction with the opportunity, and perhaps some of the motivation, to achieve the goals of the syllabus in the time allotted. His job is not yet finished. The different aptitudes and motivations of students (11.5.), plus the differences among schools and classes in terms of teacher and other resources must also be catered for, and a third task becomes necessary: the recommendation of a range of possible instructional sequences, all of which will hopefully provide equivalent opportunities for students by maximizing the various individual contributions of teachers and various combinations of instructional hardware and software. The design of actual instructional sequences, or 'schemes of work', is of course the responsibility of the individual teacher, but it is the language engineer's duty to alert them to the advantages and disadvantages inherent in various approaches to syllabus implementation.

There are four aspects of instructional sequence design to be considered here:

(1) Presentation of the syllabus
(2) Organizational models
(3) Sequencing of the syllabus
(4) Materials and methodology selection.

The presentation of the syllabus is where the language engineer or program designer can make his greatest contribution. The options for organizational models and sequencing of the syllabus usually cannot be decided on by the language teacher acting alone, but must be coordinated by the school through its language department or committee, because decisions about organization or sequencing may affect teaching assignments and materials or facilities allocations for the entire language program (and sometimes for the general subjects as well). The materials and methodology finally selected for each sequence in each language class, however, is usually a matter for decision by the individual teacher.

The manner in which a new syllabus is *presented*, or 'sold', to its potential consumers has a great deal to do with its eventual success or failure. The syllabus cannot simply be printed up and issued to teachers, no matter who has designed it or how well it is designed. Some kind of presentation, publicity, or actual orientation program requiring the presence of teachers must be devised so that the rationale for the new syllabus, as well as its content, will be made known to the language teachers, curriculum developers, administrators, general subject teachers, and students, and perhaps also to private publishers, parents, and the general public. Ideally, some of these groups will already have participated in the design of the syllabus; if not, the presentation becomes that much more important.

The possible ways of presenting a new syllabus are numerous. For language supervisors, department heads, teacher trainers, or other key personnel in large school systems, the best method by far is an actual in-service course, held at a central point, lasting several days, and involving the key personnel either as presenters or participants. Inputs to the design of such in-service courses, wherever they are feasible, becomes the most important function of the language engineer during his third task. The content of the in-service course should cover all aspects of the syllabus plus plans for its further presentation at lower levels, and the format can include lectures, demonstrations, workshop sessions, seminars, school visits, videotape presentations, and many other varied activities which enable the participants to interact and discuss the new syllabus in detail.

Such high-level in-service courses, in large centralized school systems, can then be replicated in part at the lower levels by those who participated in the original courses, so that eventually every language teacher will be exposed to the same content. The briefing of students on a new syllabus is best performed by their own language teachers -- this student briefing then becomes the last phase of a presentation which originated at the highest level. Briefings for school administrators, general teachers, curriculum developers in non-language subjects, and private publishers can then be organized by the same team that devised the in-service courses, using only the relevant portions of the course content and the appropriate delivery mechanisms. Finally, television, radio, and press channels can be used to reach the parents of schoolchildren and the general public.

The material to be presented concerning a new syllabus, no matter how the presentation is done, must include the same elements that were discussed in Section 11.4., but always presented in language adapted to the audience concerned. That is, not only the content of the syllabus but also its rationale must be explained; its manner of specification, its justifiability, and its attainability must be somehow defended. Otherwise, the new syllabus may be perceived by various audiences as just another arbitrary imposition of decisions by an authority that does not bother to explain itself. For the language education specialists, and particularly for the language teachers themselves, the presentation must go further: into details of instructional sequence design, including organizational models, sequencing strategies, syllabus content and methodology approaches. These aspects, of course, can be built into the original in-service course design and later replicated at the lower levels if that is the method of presentation chosen.

The *organizational models* around which instructional sequences are to be designed for a particular school normally must be decided on first. The major options for organization of language classes are essentially the same as for any other subject. They include (a) self-instruction, (b) peer instruction, (c) single teacher instruction, and (d) team teaching; combinations of these models are of course possible. The only new dimension that occurs in language instruction is the possible use of the language laboratory as well as the classroom -- theoretically, the same organizational models can be followed here also, but normally language laboratory work is self-instructional, with single-teacher monitoring or no monitoring at all. The options in organizational models are further constrained, in the typical school, by timetabling, class composition, and the availability of trained teachers, instructional materials, and laboratory facilities at any given time. The main functions of the language engineer are to point out which organizational models are likely to be most successful as vehicles for instructional sequences based on various parts of the syllabus, and to provide examples of typical uses of the models and their combinations.

The *internal sequencing* of the syllabus is a second aspect of instructional sequence design which may involve the whole school as well as the individual teacher. If the school has some flexibility in rearranging the composition of language classes during the teaching of the syllabus, for example, it will be desirable for all language teachers teaching the same language subject to follow the same overall sequence (though not necessarily using the same methods and materials). The best way to ensure that different language classes can proceed at different speeds and still allow for students to be transferred from one class to another is to segment the syllabus into a number of units or modules which have no time limits set for their completion. One way to accomplish this in practice is to devise internally a series of intermediate achievement (or criterion-referenced) tests, one for each unit or module. These tests can then be administered by the class teacher as soon as it is felt that the class is ready for them. The way is then opened for individual students to be transferred to 'faster' or 'slower' classes and still not miss the opportunity to learn each part of the syllabus in sequence. The design of the intermediate achievement tests, and the control of the whole program, in this case must rest with the language department or committee.

The opposite kind of option for sequencing, of course, is to allow each teacher to sequence the syllabus in any way she sees fit. If the syllabus covers more than one year of language instruction, however, and if teachers do not follow their classes upward from year to year, this option has the disadvantage that a change in teachers can disrupt the sequence for an entire class. It is the duty of the language engineer to point out the advantages of uniform sequencing within a school, to warn against 'lock-step' sequencing (in which time periods are set for each segment), and to provide examples of suggested sequencing, learning units, or modules within the syllabus, and methods of intermediate achievement or criterion-referenced testing. The general principles of syllabus design must also be emphasized in this connection. If the syllabus has been properly designed, even the slowest classes will achieve some of the goals of the syllabus in spite of the fact that teachers have not 'covered' the entire syllabus during the allotted time. But this can be ensured only if some control over sequencing is exercised by the teacher or the school.

Once the organizational models of instruction and the overall sequencing of the syllabus have been decided on, the *selection of methods and materials* for teaching becomes the province of the individual teacher. As far as the selection of instructional materials is concerned, the typical school affords the teacher few options in terms of pre-packaged materials, such as textbooks, workbooks, tapes, and visual aids. Many language teachers all over the world, as a matter of fact, are confined to a single textbook or a single set of course materials, and some do not even have that much to work with. In any case, even when a wide selection of pre-packaged materials is available, many teachers prefer to construct and introduce their own instructional materials to accommodate their particular styles of teaching. Most such teachers sincerely believe that their home-produced or school-produced instructional materials are superior to commercial output and to the products of organized curriculum development by the school system, for the particular purposes they have in mind. (Otherwise, they would not prepare supplementary materials to use in their classes.) And there is no logical reason for the language engineer, textbook writer, or curriculum developer to contest such practices and beliefs. If the teacher can get satisfactory results with home-made materials, and is happy doing so, then so much the better.

It must be assumed, a priori, that the language teacher is in a better position than anyone else to assess the immediate feedback from a particular class of learners, not only in terms of opportunities for language learning but also in terms of motivational factors. This assumption applies equally to the selection of teaching *methods* as it does to the selection of materials. At the classroom level, motivation of students through the use of materials with interesting content presented in unusual ways may be far more important than trying to ensure that every class is exposed to exactly the same pre-tested and pre-packaged learning opportunities presented through methodologies approved by teacher trainers and curriculum developers.

As far as methods are concerned, the instructional sequences need not even correspond to the teaching/learning strategies implied by the syllabus; what the teacher does best is far more important. For example, suppose a particular segment of some syllabus concerns relaying information orally. At some stage of the learning process, a practical activity seems to be called for whereby students are arranged in groups of three: one to give the message, one to relay it, and one to receive it. But the teacher of a certain class may prefer a grammar and translation approach which involves no oral practice at all -- only written work which the members of the class perform individually. If this method gets satisfactory results, as evidenced by criterion-referenced tests covering that segment of the syllabus, then who is to quarrel with the teacher? Her reasons for teaching the segment in that way may have to do with problems in classroom management, motivational considerations, a desire to emphasize written work at that particular stage, or simply her own personal strengths and weaknesses as a language teacher; the reasons are irrelevant so long as the job gets done.

The example just given may be an extreme one, but the point needs to be made rather strongly. In the design of actual instructional sequences, the individual teacher must be given latitude in the selection of both materials and methods, even to the extent of allowing improvisation on the spur of the moment. As we have seen, motivation of students is just as important as providing them with suitable language learning opportunities, and there are at least two ways a teacher can motivate a class which have nothing to with instrumental motivation or the intrinsic motivation of language curriculum: She can make the class like her personally, or she can make them like the way the class is taught. All teachers have their own preferred teaching styles, and most enjoy creating at least some of their own instructional materials. It is patently unwise to inhibit either tendency by insisting on materials and methods which some teachers feel uncomfortable with.

What is the role of the language engineer or program developer, then, with regard to this phase of instructional sequence design? It is analogous to his role in recommending organizational models and syllabus sequencing: namely, to identify a range of specific types of materials and suitable methods of presenting them, such that individual teachers will be encouraged to choose from among them the combinations that best suit their own classes and styles of teaching, and perhaps to try out new combinations they had not considered before. This function of the language engineer is best performed at the highest level -- for example, during the in-service course at which the new syllabus is first presented. Participants in the high-level course or briefing can then interpret the recommendations in the light of their own provincial or local conditions as they pass them on to teachers further down the line.

11.7. Contrastive analysis

So far we have been considering the engineering problems common to all language syllabus implementation, in monolingual as well as bilingual situations. There are special situations, however, which arise whenever the language variety distance (4.3.) is reasonably great between the home language of the majority of the school population and either the language subject or the medium of instruction, and whenever the distance is great between any two school language varieties themselves. Examples:

USA: Native speakers of Spanish taking language and general curriculum in English
Canada: Native speakers of English having French as a required subject or medium of instruction
Belgium: Native speakers of either Dutch or French taking the other language as a required subject
Malaysia: Native speakers of Bengali taking general curriculum in Malay and such required subjects as English and Tamil
Sweden: Native speakers of Finnish doing general curriculum in Swedish and using German as a resource language in the university.

In such situations, an additional tool of the language engineer becomes relevant: *contrastive analysis*. Since this is one of the most widely misunderstood techniques of applied linguistics, as far as the layman is concerned, and one of the most controversial among linguists themselves, its role in language engineering must be spelled out very carefully. Much of the criticism and rejection of contrastive analysis, in fact, stems from its applications to areas of language education where it does not belong -- namely, to the design of instructional sequences (11.6.), in terms of both curriculum materials and teaching/learning strategies, and to the design of achievement, diagnostic, and proficiency tests, where if contrastive analysis is irrelevant it may even distort the information obtained from such tests. There are, however, many other uses of contrastive analysis in language engineering which are not subject to the same kinds of objections.

Before looking at the various applications, let us define the term as follows: Contrastive analysis is simply the comparison of linguistic descriptions of any two language varieties known to be different (and usually unrelated in the genetic sense), with a view to identifying the differences rather than the similarities. Language varieties separated by very short distances (e.g. dialects of the same language) can be contrastively analyzed, but in practice it is usual to rely on the comparative method in such cases, and normally language distances have to be rather large in order to justify the time and expense of contrastive analysis for educational purposes. It is also usual for one of the language varieties so contrasted to be called the 'source language' and the other the 'target language'. The source language corresponds to what is presumed to the home language of the majority of pupils in a class, school, or school system; the target language is usually a school variety (a subject, medium of instruction, or resource language). Although the source language is often abbreviated as L1 and the target language as L2 in the literature of both contrastive and error analysis, it is important to remember that these designations are totally different from most of the common meanings of 'first language' and 'second language' (see 2.2., 2.3., and also 10.8.). Apart from these common educational applications, of course, any two languages can be contrasted, and for a number of different purposes.

Since contrastive analysis always involves a comparison of the descriptions of two separate language varieties, it follows that such analysis is not possible until the prerequisite *linguistic* analyses of the varieties concerned are available. What is not so obvious is that these linguistic analyses must be *compatible*: a transformational-generative analysis of a given L2, for example, cannot be directly contrasted with a structural or traditional analysis of L1 (see 3.3.). For most practical purposes, however, the theoretical orientations of the two analyses do not matter, so long as they are compatible. But the theoretical orientations do determine the levels at which contrastive information can be developed. In general, the levels of contrast will always include one or more of the these inner-circle components:

	Phonology	
Lexis		Syntax
	Semantics	

-- and may also include some of the outer-circle components of communicative competence (kinesics, stylistics, discourse, and pragmatics -- see 11.2.). If important contrasts are suspected at the semantic level, therefore, structural descriptions of L1 and L2 are a bad choice. If the linguistic descriptions of neither lexis nor syntax contain much information about discourse structures of the two languages concerned, then not much contrastive information about discourse styles will be developed, and so forth. Thus when several different models of linguistic description of each language are available for contrastive purposes, then a preliminary survey of the suspected areas of greatest contrast will help to determine the selection.

Perhaps the best known applications of contrastive analysis occur in connection with syllabus design. In the simplest case, where the source language (L1) is the home language of the great majority of pupils affected by the syllabus, and where the target language (L2) is the only other school variety, contrastive analysis can be used in needs assessment, in syllabus specification, and especially in syllabus sequencing, where the expected degree of difficulty may influence the sequence of presentation. In all of these applications, however, it is now generally agreed among applied linguists that contrastive analysis cannot stand alone. Error analysis (8.7.) and diagnostic testing (9.7.) are also necessary to confirm the indications of contrastive analysis as to what L2 aspects are likely to be most difficult for the L1 population to learn. Because of the deadly effects of fossilization (8.3.) and habit formation, moreover, it is often desirable to anticipate and counteract the known sources of interference of L1 on L2 as early as possible --

hence the usefulness of confirmed contrastive data with reference to syllabus sequencing.

Neither diagnostic testing nor error analysis can perform this confirmatory function by themselves or in concert. If diagnostic testing is based directly on contrastive analysis, the result will be self-justifying; whatever difficulties are predicted by contrastive analysis will certainly be found to exist to some degree through diagnostic testing, but their importance cannot be weighted against other difficulties which have not been so predicted. If error analysis is coupled with contrastive analysis, there will be no way of verifying the source, importance, and systematic nature of the errors without diagnostic testing. If there is no contrastive analysis, the combination of error analysis with diagnostic testing will produce an identification of many sources of difficulty, none of which can be assigned with confidence to L1 interference, and so forth. Only the combination of all three of these tools of the language engineer is likely to produce results which will be reliable in needs assessment, syllabus design, and sequencing.

Other, less obvious applications of contrastive analysis are to be found when the language engineer is able to design, or contribute to the design of, two different language syllabuses simultaneously, or to make a needs assessment involving *two different* school language varieties at the same time. These applications, along with uses of contrastive analysis in the development of reference materials for curriculum developers, will be discussed in the final section of this chapter. (Certain other applications, to language planning rather than engineering, are summarized in 12.6. - 12.8.).

Although contrastive analysis is in general not directly applicable to the design of instructional sequences, at least three of the methods and approaches to language instruction (and the syllabus specifications and achievement tests corresponding to them) lend themselves to direct application of the results of contrastive analysis. These are translation (10.1.), grammar and explanation (10.2.), and the audiolingual method (10.3.). Although grammar and translation are no longer such popular methodologies, syllabus specifications, or testing techniques as they once were, and the audiolingual method has recently come under heavy fire, all three of the associated teaching approaches continue to be prevalent all over the world, as components (not always officially approved ones) of instructional sequences.

In fact, all kinds of language teachers are continually translating from L2 to L1, and sometimes in the reverse direction too; they occasionally require their students to translate too. Regardless of the syllabus specification or recommended teaching techniques, many language teachers enjoy nothing quite so much as giving their own grammatical explanations of various L2 phenomena, usually using the L1 medium to do this. Thus grammatical explanation may form part of the instructional sequence even when grammatical rules or paradigms are not included in standard achievement tests. In audiolingual teaching, the 'problem sounds' identified by contrastive analysis are still often drilled through minimal-pair techniques in the early stages of language instruction, even when the instructional materials and methodology discourage such practices.

Following the view expressed at the end of the preceding section, whatever techniques, materials, and methods the classroom teacher most favors should be recognized as having a place in instructional sequence design. Since there are teachers who like to translate (especially lexical items), and teachers who like to explain things (especially grammatical points) about the target language in the source language medium, and teachers who like to drill discrete items (especially pronunciation items), it becomes the responsibility of the language engineer to try to help the teachers to do these things *better*, rather than to try to prevent them from doing them at all. Contrastive analysis, of course, can supply inputs to all of these techniques, in which two specific language varieties are involved. Applications of contrastive analysis can be stressed either directly, through pre-service and in-service training of language teachers, or indirectly through the development of alternative instructional materials, teachers' handbooks, or resource materials which incorporate the research findings in pedagogically usable form.

These further applications of contrastive analysis lead us naturally into the subject of curriculum development, particularly where two or more languages are involved. Assessment of needs and resources, language syllabus design, and instructional sequence design are all parts of curriculum development, but they do not constitute the whole of it.

11.8. Integrated curriculum development

Earlier definitions have been given for *curriculum* (1.7.-1.8.) but not for *curriculum development*. Our definitions of both language and general curriculum use the criteria of achievement tests and examinations which students undergo after various stages or levels of instruction and after leaving the school altogether. If no such tests or examinations are relevant, the criteria of the stated aims and objectives of the instruction become the next most important way of defining curricula, followed by criteria deduced from models, materials, and methods of instruction as a last resort. This way of defining curriculum implies that curriculum development should logically begin with the design, tryout, and standardization of instruments to measure the degree of learner achievement of the various learning tasks set by the school, and that it should end with the design of instructional sequences to help students achieve the criteria defined by the testing instruments or the examinations. But, as we have seen in connection with the design of the language syllabus (11.4.), many other considerations besides the examination targets set by the authorities (who may be outside the school or school system) influence the development of instructional models, materials, and methods. And it is reasonable to assume that the same kinds of consideration occur in general curriculum development, which also involves the design of syllabuses as an intermediate step.

Besides his role in assessing needs and resources, designing the language syllabuses one at a time, and recommending ways of implementing them, the language engineer also has a role to play in the more general field of curriculum development. Whenever a conscious effort is being made to coordinate language and general curriculum from some central vantage point, the language engineer has other special kinds of inputs to contribute to the integration of curriculum. In addition, insofar as curriculum development is interpreted to mean the production of resource and reference materials as well as actual instructional materials, this role of the language engineer is further expanded.

A better definition of *curriculum development* would therefore recognize its *integrative* characteristics. The various terminal tests and examinations for each language and general subject offered by the school still define separate curricula (one for each subject), but the developer is not necessarily obliged to treat them separately, either in assessing needs and resources or in designing syllabuses and instructional sequences. In fact, a main purpose of putting curriculum developers under the same roof, as is the practice in many states, countries, and regions, is to *discourage* the separate treatment of academic subjects and to encourage the integration of school curricula. In general, this is more easily done at the lower levels of education, especially in primary schooling, but some integration is often possible even at much higher levels.

We can define the term 'curriculum development', then, to mean whatever is done to provide opportunities to students, through the usual school mechanisms, for meeting *all* the learning targets defined by the examinable subjects he is expected (or allowed) to study during his stay in the school or school system. By extension, this integrated concept of curriculum development can of course apply to the design of models, materials, and methods for presenting *non-examinable* subjects as well. In fact, the content or methodology of such subjects (e.g. physical education) can often be used to support learning in other, examinable subjects. It is precisely this kind of rationale which recommends the inclusion in language syllabuses of learning tasks not examined in language curriculum, but which support the learning objectives of general curriculum (see 11.3.). The reverse case, the inclusion in general subjects of learning tasks which tend to support language curriculum, has already been suggested in Chapter 5.

Using this definition, we can now identify certain steps in integrated curriculum development, some of which parallel the three tasks of the language engineer described earlier in this chapter.

Step	Typical Activity
(1) Needs Assessment	Study of all terminal achievement tests relevant to the school, and relating goals to present competence of typical students in these areas
(2) Resources assessment	Survey of teacher profiles, hardware, software, and other resources available in the typical school
(3) Syllabus allocation	Determining which kinds of needs can best be met in various types of instruction offered by the school (i.e. language, general, and extracurricular subjects)
(4) Syllabus design	Design and trial of separate syllabuses for each subject (or a single integrated syllabus for all subjects)
(5) Instructional sequence design	Presentation, organizational models, sequencing, recommended materials and methods
(6) Instructional materials	Production of new prototype materials which are needed but presently lacking in schools
(7) Development of resource and reference materials	Research and production of materials to support Steps 1-6
(8) Formative evaluation (leads back to Step 1)	Research, controlled experiments, surveys, interpretation of test results, etc. Always results in recommendation for charges.

As in the case of the language syllabus, Steps (5) and (6) can be combined, and also lend themselves to incorporation in in-service courses for key personnel. Steps (7) and (8), both of which involve research, can also be combined, and become part of the on-going work of curriculum development centers. Recommendations made as the result of formative evaluation may include revision of the tests, examinations, and objectives of instruction, changes in pre-service teacher training, or even in subject allocation.

This somewhat oversimplified sequence of integrated curriculum development activities will serve the purpose of putting the other functions of the language engineer in a larger context. At Step (3), the engineer has an important responsibility whenever two or more language subjects are offered by the same school or school system. To take a simple but typical example, let us imagine a situation in which all students are required to study the national language (NL) from the beginning of primary school onwards, and begin their obligatory study of a second language (SL) only in secondary school. Let us suppose that the terminal examinations for NL contain no requirements for study skills such as describing processes (6.3.) and writing summaries (6.6.), but the SL examinations do.

In this case, if contrastive analysis of NL and SL reveals that the discourse and stylistic features involved in these study skills are quite different in the two languages, then there is no option but to include them in the SL syllabus. But if the contrastive analysis shows these differences to be minor, the description of processes and the writing of summaries can be built into the NL syllabus, with these skills presumably being transferable to the less familiar SL when the need arises. The reasons for doing it this way, in the typical case, are that more time is available for NL instructional sequences than for SL, that there is already too much content that has to be crammed into the SL syllabus, and that the learning of the skills in NL will be beneficial to the students in terms of their general curriculum needs in any case.

Another such input of the language engineer in syllabus allocation (Step 3) occurs when decisions have to be made about the relation between language and general subjects. Map-reading is a typical example. Although the exercise of map-reading skill as such is generally confined to subjects like geography, history, driver education, engineering, and military tactics, the skill has much in common with the interpretation of other graphic and visual stimuli (6.1.). It is very useful in getting across basic linguistic notions and functions such as spatial relationships, directions, motion through reference points, comparison of sizes and shapes, the use of colors as distinguishing devices, and so forth. Should map-reading then be 'taught' in a language subject or in one of the general subjects? This decision can be guided by the language engineer's knowledge of the linguistic parameters involved and of the optimal sequencing of formal features such as prepositions, verbs and adverbs of motion and location, and various other discrete lexical and syntactic points to be covered somewhere in the language syllabus concerned. Thus, while map-reading as such is not properly part of language curriculum, the advice of integrated curriculum developers, who would include social science and natural science as well as language specialists, might be to make map-reading an early part of some language syllabus. (In many Southeast Asian schools, map-reading is not taught anywhere, and the skill must often be acquired in connection with an unfamiliar language like English later on).

The contributions of the language engineer at Steps (4) and (5), in the design of language syllabuses and instructional sequences, has already been described (11.4.-11.6.). He may also contribute to the parallel activities of general curriculum and language curriculum at Step (6). If prototype materials are being developed for general subjects, the language media of these materials should be no more difficult, in the textual sense, than the language embodied in the prototype materials for the corresponding language subject of the same level. Thus the language engineer may participate directly in the development of prototype materials for language instruction and at the same time give advice on the language to be used in the more general materials -- i.e. in terms of vocabulary and grammar, and sometimes even in terms of phonology. In this dual role, he can actively help to integrate language and general curriculum by ensuring that the linguistic characteristics of both kinds of instructional materials are mutually supportive.

Insofar as language curriculum alone is concerned, the language engineer can also contribute at Step (6) in in-service courses or workshops where teachers are involved in the collective production of prototype or trial materials, and where such materials are introduced or demonstrated in connection with various methodologies. At Step (7), the development of resource and reference materials provides many avenues of application of the language engineer's particular expertise -- for example, to the following types of reference materials:

(a) Pedagogical grammars (for teachers or students);
(b) Pronunciation and spelling manuals;
(c) Dictionaries, glossaries, and contrastive word-lists;
(d) Analyses of general curriculum texts, with frequency lists of vocabulary and structures occurring in them;
(e) Translation manuals and guidelines;
(f) Language aptitude tests (for a specific L1 population);
(g) Diagnostic, achievement, and proficiency test item banks (including bilingual items);
(h) Complete contrastive analyses of relevant school languages, for other curriculum developers, teachers, and teacher trainers.

As a result of formative evaluation (Step 8), finally, the language engineer may have the opportunity to act as a language planner (see 12.8.). In this role he may be asked to change the content of the language examinations themselves, and thereby to change language curriculum as defined in this book. If he is asked for advice on changes in the linguistic content or language medium of general subject examinations, he can make a lasting contribution to needs assessment in language syllabus design as well. If the formative evaluation suggests changes in the language proficiency or methodology training of teacher trainees, the engineer can influence the content of pre-service as well as in-service training of language and general teachers. During all stages of the continuing process of formative evaluation, in fact, and not only in helping to carry out recommendations stemming from it, the language engineer can act as a consultant on the linguistic aspects of the integrated curriculum and its evaluation. Here again, his activities will tend to merge with those of the language planner.

CHAPTER 12

SUMMARY AND CONCLUSIONS

12.1. Review of the topics
12.2. Separating the language and study skills
12.3. The linguistic distances
12.4. Tests and surveys
12.5. The language program defined
12.6. Applications of linguistic analysis
12.7. The multilingual, multichanneled curriculum
12.8. Language planning for the school system

The subject of language in schools has now been examined from almost all possible angles. The first four chapters of the book have concentrated on the major topics for discussion, which have been presented in both theoretical and popular terms, with an effort being made to include both actual and ideal models of school language use as illustrations in delineating the range of the subject matter. Chapters 5 - 11 have attempted to comment on these general topics -- the comments being organized around themes like language acquisition, learning, teaching, and testing and their relation to study skills, language curriculum, and general curriculum. The main emphasis has been on engineering solutions to problems arising from these complex relationships.

It now remains to summarize these topics and these comments, putting them in a somewhat different arrangement so that some conclusions can be drawn. One major conclusion will be that the language engineer's principal task is to reduce various kinds of linguistic and communicative distances for as many learners in the school as possible, as fast as possible. Another is that the multichanneled curriculum which constrains him in doing this may also be a multilingual one, in many different ways. In the very last section of this chapter (and of the book), the relation between language engineering and language planning is explored. It is suggested that the tools of applied linguistics can be as useful in language policy *formulation* as they are in its implementation, since implementing policy so often means repairing damages occasioned by faulty educational planning -- and especially, by failure to consider the full implications of decisions about the form and role of multichanneled language in the typical (often multilingual) school.

12.1. **Review of topics**

Schools are defined as institutions which have been established primarily to give organized instruction to groups of learners, at educational levels from kindergarten to university postgraduate and professional studies. Schools may have other functions besides giving organized instruction, and organized instruction may take place in institutions other than schools. The instruction itself does not have to be in academic subjects; it can also be aimed at socialization of students, inculcation of correct attitudes, habits, and useful skills or development of physical and moral as well as intellectual capacities of students.

School curricula are defined in terms of the content of examinations, tests and other instruments used to evaluate the success of instructional programs in schools or to measure the degree of achievement of instructional goals by individual students. If tests are given in non-academic as well as academic subjects, the non-academic subjects also become part of the school curriculum. Typically, the evaluation instruments relevant to the school program, whether they are administered during, immediately after, or some time after the corresponding period of instruction, reflect the general aims and specific objectives of the instruction better than any other criterion, and the same instruments may also reflect fairly well the instructional materials and the teaching/learning strategies which are available and recommended for the instructional sequences concerned.

Specific examinations and tests are conducted by schools wholly or in part in one or more language varieties -- that is, some of the test content and all of the test instructions are normally expressed linguistically. The language varieties used in testing need not be the same ones that are used in the corresponding instructional sequences, but success in a given examination or test still depends heavily on the examinee's control of the language media actually used in the test. It is common, therefore, for at least some of the instructional sequences relating to curriculum to be conducted in the same language varieties as occur in the corresponding tests.

The *medium of instruction* is defined as the particular variety of written or spoken language used in any instructional sequence in a school. The labels used by schools to designate their media of instruction are usually too broad to be useful, and in some cases are completely at variance with actual practice. Since some actual media of instruction (and media of examination) recur as part of the subject matter of *language instruction*, the relation of language instruction as such to the main media of instruction and examination must be taken into account. The *language curriculum* proper, however, must always be considered a separate matter, since it is defined in terms of tests and examinations which may have nothing to do with media of instruction in the same school (and in some cases very little to do with language instruction either).

The linguistic aspects of the media of instruction are divided into two broad categories: a) those aspects of organized instruction which involve the specific characteristics of any variety of written or spoken language; and b) the psychological, social, and cultural factors that must be considered in accounting for the role of any language in any type of learning process. This distinction recognizes the need to examine the media of instruction from a sociolinguistic and psycholinguistic point of view, as well as from a linguistic and pedagogical point of view, while at the same time stressing the differences between the two approaches.

The *language channels of instruction* are defined as generalized uses of spoken and written language in instructional sequence, without regard for the particular variety of language so used. The channels are thus quite different from the *media* of instruction. Besides the two broad categories of oral and written channels, the sociolinguistic approach requires that *non-verbal* channels also be considered, and the psycholinguistic approach requires that *self-instructional* channels be regarded as distinct from channels used or managed by teachers. Educational considerations, and especially our definition of curriculum, make it necessary to recognize a further distinction -- one which separates *test* channels from teaching and learning channels. Thus, although basically the same channels are involved in all teacher performance and in all forms of instructional materials and tests relating to a given sequence of learning, the channels are not the same thing as curriculum.

General curriculum is defined by the content of those tests and examinations which are conducted by the school or school system but which do *not* carry language-variety labels such as 'Chinese', 'French', 'Swahili', etc. *Language curriculum* is analogously defined by tests which *do* carry such labels. Thus, a subject called 'English' (if examinable) would belong to language curriculum and a subject called 'Language Arts' would belong to general curriculum. The term *language subject* covers any instructional sequence (examinable or not) which carries a language-variety label. The specification of what is to be taught or learned in each language subject is called a *language syllabus*.

The language syllabus which typically shares content with the corresponding language curriculum but is distinct from it thus becomes the blueprint for language instruction. But the syllabus is not the same thing as the actual instructional design or series of lesson plans, because language instruction shares the same channels that are used in general subjects, and potentially uses *media* of instruction which differ from the language variety which is the ostensible subject of instruction (for example, in the grammar-translation method). Like the language syllabus and language instruction, *language testing* is not the same thing as language curriculum either, because language tests are given for reasons other than the evaluation of student achievement in terms of curriculum objectives.

The terms *medium of instruction* and *language subject* are used in preference to *channel of instruction* whenever it is important to distinguish the particular language type or variety which is being used or learned at a given time, and to emphasize that generalized language channels are not the point of the discussion. When the distinction between medium of instruction and language subject is not applicable, the term *school language variety* is used to cover both concepts. The actual classification and labelling of school language varieties, and indeed of all language types, is a difficult problem, no matter what branch of grammatical or linguistic theory one resorts to. The solution proposed for this book is a universal language typology which is meant to apply very roughly to actual school situations. This classification replaces the more common official terminology (discussed in Chapter 2) which includes almost meaningless terms such as 'mother tongue' and 'second language'.

Monolingual, bilingual, and multilingual education can also be defined in terms of the school language varieties concerned, with primary emphasis on the media of instruction and without any reference whatsoever to 'mother tongues' or to the sociolinguistic characteristics of the community where the school is located. In bilingual education, a distinction can be made among partial, sequential, and full bilingual models of instruction. In all these patterns of education, including the monolingual ones, there is always some distance between the actual media of instruction or language subject and the students' individual and collective competence in the school varieties, because no student can be considered as capable of perfect comprehension of the language variety coming through various channels from the teacher or the instructional materials. Whenever more than one language variety is used in a school, moreover, a second kind of distance can be recognized: the distance between the language varieties themselves.

In Chapter 4, an initial attempt was made to quantify these basic distances of language and general curriculum in terms of generalized formulas. *Channel distance* represents the gap between the actual spoken or written language being used by the teacher or the instructional materials at any given time, and the student's or the class's versions of the texts concerned. Channel distance is involved whenever students are reacting to, producing, or participating in the production of instructional texts. (This kind of distance was later further generalized as *proficiency distance*, and then broken down into its several components -- see Section 12.3. of this chapter.)

Language variety distance (i.e. medium distance or language subject distance) represents the intrinsic distances between each pair of language types used as media of instruction or occurring as part of language curriculum in the school. Language variety distance applies regardless of what channels and instructional texts are employed in the conveyance of curriculum, and thus it can be made to apply to the distances between home or community languages and school language varieties as well. Measures of language variety distance, both among school languages and between home and school languages, can be derived from the same language typology which is useful in describing language curricula and classifying the various models of monolingual, bilingual, and multilingual education. Such measures basically use the criteria of comparative and historical linguistics in preference to the criterion of mutual intelligibility.

In the case of both language variety distance and channel (or proficiency) distance, the linguistic distances may range from infinity to near zero. In the case of channel distance, the distances can be fairly accurately measured whenever the school language variety concerned has been adequately described, and when a sufficient number of representative text samples from each channel are available for analysis. This description or analysis becomes one point of reference in the formulas for channel distance, the other point of reference being provided by the diagnostic or proficiency testing of individual students or whole classes. The gaps thus revealed can be arbitrarily segmented into 'units of distances' which will be useful in examining the language syllabus and methodology options for the instructional sequence which attempts to provide students with suitable opportunities for closing the gaps. In practice, this is usually worth doing only for groups of students, or classes, not for individual students.

Similarly, language variety distance can be quantified whenever historical and comparative treatments of the school (and community) language varieties concerned are available. Formulas of variety distance then become potentially useful in examining the media options in general curriculum as well as the subject options in language curriculum.

The *linguistic options in general curriculum* thus involve the choices ideally available to school administrators in matching the media of instruction as closely as possible to students' collective competence in school language varieties, and also to the language channel requirements of the curriculum as a whole -- i.e. the medium choices which will result in the shortest possible channel distances at each level of general instruction. The best options, however, cannot always be selected solely on a theoretical basis. Linguistic, psycholinguistic, and sociolinguistic principles, in such cases, can suggest fruitful areas of experimentation and pilot programs which ought to yield the kind of information which will facilitate the choice of medium and channel combinations.

The *options in language curriculum* are clear-cut ones when the media of general curriculum have been fixed, when the various channel and text requirements are known, and when the aims of language curriculum and instruction are simply to support the development of student competence in the media and channels so designated. Otherwise, the options become very complex. Other factors affecting curriculum options, besides the aims of language curriculum and instruction, are classified either as *constraints on media choice* or *constraints on implementation*. The first type of constraint includes students' attitudes toward school language varieties and their motivation for learning them, teachers' linguistic competence and attitudes, and the availability of instructional materials in the desired language type. Implementation constraints include those imposed by the language curriculum itself, linguistically heterogeneous classes, and the fit between the oral and written versions of the school languages.

When the only available options are those of implementation (because decisions on media, channels, and language subjects have already been taken), language variety distances become completely irrelevant. The form and role of each school language variety has to be taken as given, no matter how great the intrinsic distances are between school varieties, and between school and home or community varieties. Implementation strategy (later to be called language engineering) in the school context is thus basically directed toward creating opportunities for students and classes to reduce their channel or proficiency distances in each school variety as rapidly as possible.

12.2. Separating the language and study skills

A basic problem in educational language engineering is how best to separate the so-called 'study skills' from the 'language skills' in the planning of language curriculum, in planning for language use in general curriculum, and in designating actual sequences of language instruction. As we have seen in Chapters 5 - 8, there is always a potential or actual overlap between language and general curriculum in terms of how the relevant skills are acquired or learned by students in the school. Language skills are acquired outside the language class -- not only in general subject areas, but also in the process of socialization and the cognitive and experiential development of individual students within the school walls. Study skills are often taught, either explicitly or implicitly, in programs of language instruction, or they may be prescribed for learning, by implication, through the requirements of tests and examinations associated with language curriculum. For example, foreign language curricula often require paragraph-writing or summarizing skills which are neither taught in the national-language subject nor acquired in connection with general curriculum.

The 'Language Arts' type of curriculum and the instruction associated with it which occurs in many countries, usually in school systems with basically monolingual characteristics, represents a conscious attempt to resolve this dilemma, by combining the language and study skills requirements of education with practice in the performance of specific creative, critical, and communicative tasks. Language Arts courses labelled as such, however, are excluded from language curriculum by our definition, and must be considered as part of general curriculum (as would, for example, courses in public speaking and rapid reading be classified). In the design of syllabuses and instructional sequences for such courses, the inputs of the language engineer are nevertheless obviously important -- perhaps more important, even, than his advice to general curriculum developers on the form of language to be conveyed through the various channels at each stage of general instruction.

In Chapter 5, the language skills were defined in terms of individual language proficiency in the school language varieties concerned, and in Chapter 9 (Section 9.8.) the techniques for measuring this kind of proficiency were discussed. But this definition of proficiency specifically excludes certain elements of what is usually called 'communicative competence', and does not separate, except in a theoretical way, the many active and passive skills involved in the use of the various oral and written channels of the same language variety. The skills required for reading, writing, listening, and speaking are obviously not all linguistic skills, as we have seen in Chapters 7 and 8, but there are certain advantages to the language engineer in assuming that the linguistic skills can at least be separated out from the cognitive, experiential, and social factors in the use of channels and in the interpretation of texts conveyed through channels. This opens the way to identify those study skills which are of particular relevance to language learning and language use.

The study skills identified in Chapter 6 were classified under these broad headings: creating and interpreting graphic and visual displays; relaying verbal information; describing processes, giving instructions, and narrating events; using reference materials; conducting interviews and constructing questionnaires to obtain additional information; outlining, summarizing, and synthesizing material obtained through different channels; arguing and persuading; translating, interpreting, and paraphrasing. This classification, along with the definition of language proficiency, allows us to see more clearly the relationship between language learning and acquisition, on the one hand, and the learning or acquisition of other skills relevant to education, on the other. But it still does not tell us where the language and study skills should be *tested*, be *taught*, in actual instructional sequences, or where they should be tested, in terms of language and general curriculum. This determination may be within the province of the educational language planner, but it is usually out of the control of the language engineer.

Separating the language and study skills, finally, has certain advantages in the solution of the central problems of this book (originally stated in Chapter 4): Given the all-too-frequent conflict between the objectives of language curriculum (as laid down by the school) and the language requirements of general curriculum (as practiced in the same school), how can the language engineer reconcile these conflicting aims in designing instructional sequences in one or more languages? If options in language medium choice and language subject requirements are still open, how can the language planner arrive at the advice he will eventually give to the educational authority? It is the contention here that these central questions are best answered, for the typical school system, by making a clear distinction, at least in theoretical terms, between language proficiency and other kinds of proficiency, and between language skills and other kinds of skills.

Before presenting our conclusions, however, let us first review the tools available to the language planner and/or engineer working in the educational context. These tools include measures of distance between language varieties and between different channels and uses of the same variety, the various types of language tests and surveys relevant to education, the methods and approaches available for language instruction itself and their relation to language syllabuses and curricula, and the other tools of applied linguistics such as text analysis, error analysis, and contrastive analysis. The nature and applicability of these tools have been discussed in many different sections of this book; it only remains to summarize the observations, formulas, and underlying linguistic principles. In the course of the summaries presented in the next four sections, it will be seen that all of these tools relate in one way or another to the problems of separating language and study skills.

12.3. The linguistic distances

Six different kinds of linguistic distances have been identified: 1) channel distance and 2) language variety distance (Chapter 3); 3) literacy distance (Chapter 7); 4) active/passive distance (Chapter 8); 5) proficiency distance and 6) cultural distance (Chapter 11). The characterizations and formulas pertaining to these distances are repeated here.

1) *Channel distance* is the most basic of all distances as far as the student is concerned. This is the gap which the student experiences vis-a-vis the language variety or code which forms the communication bridge, through one of various channels, between himself and the school at any given moment. Specifically, it is the distance between the instructional text, oral or written, and the student's own version of that same text. Channel distance is thus an individual matter which varies from context to context in both language and general instruction -- the variables being the teacher, the instructional materials, the other members of the class or study group, and the student's own competence in the particular code as conveyed through the channel at that particular time. This distance is therefore a kind of *psycho-linguistic* distance, and one which is amenable to change through engineering. It occurs in all types of schools, from the most monolingual to the most multilingual.

For the language engineer, it is the *average* channel distance for the whole class, rather than individual distance, that matters most. If we let XSt represent any spoken text in Language X presented or prescribed by a teacher, and XWt any such written text, the basic formulas for channel distances of a given class (c) are as follows:

Understanding: XSt - XUc = spoken channel distance
Reading: XWt - XRc = written channel distance

2) *Language variety distance* is an expression of the inherent distance between any two standardized language varieties recognized by the school or by the community as being different (i.e. designated with different labels). The two language varieties in question may function as media of instruction, as language subjects, or merely as lingua francas of the school or community which do not formally occur in any instructional sequence. Variety distance is best expressed in comparative/historical terms, as a measure of closeness of genetic relationship between the two varieties. For example:

Parisian French	-	Canadian French	= 1
Standard French	-	Standard Italian	= 2
Modern French	-	Classical Latin	= 3
Modern French	-	Modern German	= 4
Modern French	-	Modern Hindi	= 5
Mauritian Creole	-	Market Swahili	= ?

3) *Literacy distance* is an attempt to quantify the gap which exists between all spoken languages and their graphic representations. The crucial assumption made here (and one which is certain to displease non-linguists) is that the complexity of graphic systems and the student's control of these complexities are the *only* variables involved in literacy -- that is to say, that *all* other components of the competence to deal with written language which is commonly called 'literacy' also occur as components of the competence to deal with oral language. A corollary of this assumption is that, although any natural language text written in a standard orthography can be reproduced orally, or 'read aloud' meaningfully, the reverse is not true, in the sense that no standard orthography in the world is capable of reproducing spoken language with the same degree of fidelity as a narrow phonetic transcription or a voice recording.

Defined in this way, literacy distance becomes a constant for the student in his interpretation and use of written, a opposed to oral, channels of a given medium of instruction or language subject. Since the mechanics of writing systems, from the basically phonemic notations of languages like Malay and Turkish all the way to the logographic or morpheme-based notations of languages like Chinese, exhibit such as wide range of complexity, it follows that the *mechanical complexity* (symbol M) of a given graphic system is obviously a factor in literacy distance for the languages that use the system. Languages such as Hindi/Urdu, which are written in two different orthographies, will have different values for M, depending on the text. But for most languages, M is a constant, as is the competence of the student in deciphering the mechanics of the written language concerned; the latter is called *literacy competence* (symbol L). Since literacy distance applies to both the interpretation and the production of language through the written channels, it is a factor added on top of the speaking and understanding competence of the pupil (p) in Language X, as shown by these formulas, in which XT is the text to be produced or interpreted:

$XT + XM - XUp - XLp$ = literacy distance in reading Language X

$XT + XM - XSp - XLp$ = literacy distance in writing Language X

$XM - XLp$ = generalized literacy distance.

4) *Active/passive distance* is the theoretical gap between performance in speaking and writing and competence in understanding and reading a particular language type. Like literacy distance, this distance is presumed to be a universal one which applies regardless of language variety or code. But in this case it is not necessary to consider the mechanical complexity of the graphic system involved, because this factor can be handled by application of the appropriate literacy formula. The concept of active/passive distance as presented here involves another somewhat controversial assumption -- one that, at first glance, seems to fly in the face of common sense. The assumption is that, *given a choice of what to say*, the pupil's speaking proficiency in Language X (XSp) is exactly equivalent to his overall proficiency in Language X (XPp). Conventional wisdom holds that passive control of any language always exceeds active control, so that the ability to understand (XUp) should be greater than the ability to speak in

any language. But this observation is based largely on observations of learner behavior in unnatural situations -- when, for example, the learner must translate, paraphrase, or otherwise respond to a structured stimulus provided by somebody else, as in the language classroom or the language testing situation.

The assumption that speaking proficiency (XSp) is equivalent to overall proficiency (XPp) implies that proficiency in understanding a spoken text (XUp) must involve something more than just basic linguistic competence. In very simple terms, this position can be justified in the following way: In all communicative situations (as opposed to language teaching and testing situations), the pupil controls what he says but not what he hears. The second assumption, then, is that all differences between speaking and understanding proficiency are due to the pupil's *ability to make inferences* about what is being said in the language concerned. This ability to infer (symbolized as XIp), like all other linguistic skills, can either be developed through language instruction or improved through exposure to Language X in other contexts. Inferring skill can also be measured independently of basic language proficiency, and to the extent that it improves, it will increase both listening and reading comprehension in equal measure. These assumptions, together with the literacy formulas, yield the following formulas for active/passive distance:

$XTp - XPp \;\; (= XTp - XSp)$ = pupil's deficiency in producing an oral text *of his own choosing* in Language X

$XTp - XPp - XIp$ = pupil's deficiency in understanding an oral text produced by somebody else (XTo)

$XTp + XM - XPp - XLp$ = pupil's deficiency in producing a written text *of his own choosing* in Language X

$XTo + XM - XPp - XIp - XLp$ = pupil's deficiency in understanding a

written text produced
by somebody else
(XTo + XM)

The above formulas, if verifiable, show clearly why reading is typically the most difficult of all linguistic skills. They also suggest why it is so easy for those primarily interested in reading to be confused over the nature of the language learner's participation in listening to spoken language. The formulas also preserve conventional wisdom concerning the passive skills, provided it is realized that most texts for reading and listening (XTo) are inherently more difficult than texts freely produced by the language learner himself (XTp).

Calling reading a 'passive' skill is, obviously, unfortunate terminology, and a usage that enrages many reading specialists. The analysis adopted here acknowledges that both reading and understanding spoken language involve active use of the inferring skills (XIp), while merely hearing spoken language and looking at a printed page do not. But it is maintained here that inferring is also a component of linguistic competence, measurable (by inference) from standard tests of language performance.

5) *Proficiency distance* is the last of the purely linguistic distances. It is generalized from all the other formulas, and applies to a student's ability to use a given standard language variety in all the channels of general and language instruction and of school interaction involving that variety. In this case, however, it is assumed that all the texts that must be understood and reacted to by the student are perfect ones -- that is, the texts are error-free products of fully competent speakers and writers of the most standard variety of the language type, and that the texts come to the student through noise-free channels. It is further assumed that all the texts which must be produced by the student in speech or writing have no limits of linguistic difficulty (but they may have limits in terms of cognitive, experiential, or sociolinguistic difficulty) -- that is, they are the same kinds of texts which native speakers and writers at the equivalent level of education are called upon to produce. Proficiency distance, then, is actually a restatement of channel distance (the first linguistic distance) in idealized terms, and it is what most actual language

proficiency tests attempt to measure. The formula is as follows, with n representing the native speaker:

$$XPn - XPp = \text{proficiency distance for pupil } p$$

From the grammatical point of view, XPn or 'native speaker proficiency' represents a knowledge of the rules of phonology, lexis, syntax, and semantics for Language X. In applying the formula to the specific skills of speaking, understanding, writing, reading, interpreting, and translating, both terms (XPn and XPp) can be expanded by applying the appropriate formulas for literacy distance, active/passive distance, and language variety distance, since XP (or YP, in the case of translation) is the basis for all the other distances.

6) *Cultural distance*, finally, represents an attempt to arrive at a formula for communicative competence which derives from and builds on the corresponding linguistic concept of proficiency distance (above). Like the formula for literacy distance, it involves an attempt to quantify the complexity associated with a given language type and the student's familiarity with that complexity. In the case of cultural distance, however, the complexity is not one of graphic systems, but of pragmatic and sociolinguistic systems -- especially the range of speech acts, styles, codes, lects, gestures, proxemic signals, topical, literary, and background allusions, and verbal repertoires which are available to the fully competent communicator in the language type concerned. This *cultural complexity* (symbol XCn) can be assigned a value, which is then added to the basic linguistic proficiency of the native speaker (XPn). The student's ability to interpret and use kinesics, allusions, changes in codes and lects, and various kinds of speech acts associated with Language X has been called simply his *familiarity* (symbol XFp) with the sociocultural aspects of the language. This is also assigned a value, to be subtracted in the equation along with the value for language proficiency proper (XPp). The resulting formula for cultural distance (which might also be called sociolinguistic distance) is as follows:

$$XPn + XCn - XPp - XFp = \text{cultural distance}$$

In terms of macrolinguistic analysis, cultural complexity (XCn) represents a knowledge of the kinesics, stylistics, discourse conventions, and pragmatics associated with Language X in a particular culture. In connection with the varieties of English spoken around the world, for example, XCn might have several different values, although XPn would remain roughly the same.

12.4. Tests and surveys

The main task of the language engineer (and the language planner) is to reduce the distances described in the previous section by whatever means he has at his disposal. The only distance which is completely out of the reach of the language engineer is language variety distance, since the inherent differences among language types used as media of instruction in schools or offered as subjects of study in language curriculum are always 'givens' as far as implementation strategy is concerned. All the other gaps (including cultural distance) are in one way or another amenable to bridging, no matter what policy options have been taken by school administrators and educational planners. The implementation of local, provincial, national, or international language policy in curriculum is the primary concern of the language engineer.

As we have seen in Chapter 11, the first step in implementation is an independent assessment of language needs and language resources, even though needs and resources assessment may have already been done for the general curriculum. This is because the language engineer's main strategy for closing the relevant distances lies in increasing opportunities for individual students and groups of students in the schools to close these gaps through their own efforts. The nature of the optimal opportunities is determined by the linguistic and communicative needs of the students, of course, but the nature of the actual opportunities depends on the availability of suitable language teaching staff and appropriate instructional materials. Thus, for the language engineer, the most important distance, in terms of implementation, is the distance between needs and resources.

For this first stage of language engineering (as opposed to language planning, which can change needs and create resources), the most immediately useful tools are tests, measures, and surveys of different kinds. Some of these tools are language tests and examinations, some are measures of communicative competence, verbal repertoires, and other areas closely related to language, some are measures of language aptitude, some are specifically designed diagnostic tests, and some are surveys, questionnaires, or interviews that seek to collect information on student and teacher motivation, including attitudes toward the language varieties relevant to the school and community as well as to the particular varieties that must be taught or learned. Other tools include those common to general education which are also relevant to language education: measures of general intelligence, cognitive development and 'verbal skills' (this last category often testing experiential rather than linguistic development); tests and surveys which seek to collect information on socialization, acculturation, and general attitudes toward schooling. These other types of measures, although useful and often available to the language engineer, can be considered as auxiliary rather than basic tools.

The necessary assessment of needs and resources of the school or the school system requires the application of some of the basic tools with regard to students, some with regard to teachers and instructional materials, and some across the whole spectrum of language instruction and curriculum. Although many of the tools, and especially the four categories of language tests proper, are ultimately based on linguistic analysis itself (see Section 12.6.), we will consider their applications first, in the order in which the various tests and surveys were first introduced in the earlier chapters.

1) *Language aptitude testing* (9.5.) is useful to the language engineer in two ways: a) in designing instructional sequences to accommodate slow, average, and fast groups of learners who are subject to the same language curriculum (i.e. required language subjects); and b) in setting criteria for the admission of students to optional language curriculum (e.g. elective subjects). Since language aptitude means for large populations of learners tend to even out (provided the aptitude measures are reliable), aptitude tests are usually of little use in

syllabus design or in the selection and training of teachers, except insofar as the teachers themselves are cast in the role of language students. As far as language teaching methodology is concerned, aptitude tests can only indicate the *need* for different techniques or strategies for different groups of learners; they cannot suggest the most effective methods for teaching such groups. It often happens, however, that a particular class, school, or even whole school sub-system (e.g. one offering professional or vocational education) will contain or attract students who, as a group, are well above or well below average in language aptitude. In such cases, instructional sequences which move faster or slower than usual can be planned. In connection with optional language curriculum, low aptitude scores can be used to discourage or actually bar students from attempting difficult language subjects.

2) *Achievement testing* (9.6.) not only provides the instruments that define language curriculum itself, but also potentially provides the language engineer with a clear statement of the objectives to be attained *at each stage* of language instruction. These objectives can then be better reconciled with the other goals of language acquisition, learning, and teaching which are relevant to general curriculum at the same stage or to other language curriculum at a later stage. Another way of putting this is to say that, at any stage of language instruction, the achievement tests pertaining to that stage give the language engineer a more or less precise definition of 'X' or 'XT' in any of the formulas for linguistic distance -- for example, the 'active' distance a given class (c) has to cover in order to produce satisfactory specimens of written text (XT + XM) required by an achievement test:

$$XT + XM - XPc - XLc = ??$$

Such a test fixes at least the terminal point at which the language engineer must aim in providing the class with opportunities for improving their general proficiency (XPc) and their literacy competence (XLc) in the style of language involved. Finally, unless the language engineer is operating at a curriculum level *below* the level where language achievement tests are developed (e.g. in a school system subject to external national or international examinations), he may also be able to affect the construction of the tests themselves. If so, he can often make them more accurately reflect the terminal-goal information that he needs to know.

3) *Diagnostic testing* (9.7.), besides being the most useful type of testing for the classroom teacher, has two main uses for the language engineer: a) in identifying the specific *needs* of language learners, both in terms of the broad linguistic skills and in terms of discrete items of pronunciation, vocabulary, and grammar, and b) together with error analysis and contrastive analysis (see 12.6.), in remedying the specific difficulties which whole groups of language learners are encountering at a particular stage of instruction. Diagnostic testing, along with text analysis, can supply much of the information needed on the 'minus' side of any formula of distance. For example, in the formula just given -- the

$$XT + XM - XPc - XLc = ??$$

details involved in XPc which relate to the specific goal XT + XM may be too fragmented to be gotten at by a general proficiency test, and the literacy details in XLc will not be covered at all. Besides providing this kind of information about distances to be covered, diagnostic testing can also provide information about the *treatment* of errors during the course of language instruction, and about the *prevention* of errors through language syllabus design.

4) *Proficiency testing* (9.8.), as pointed out previously, is an extremely useful tool for the language engineer because it can substitute, in a pinch, for any other kind of language testing, should other instruments be unavailable, and if the formula for cultural distance can be applied it also supplies the baseline data for measures of communicative competence. In terms of language curriculum itself, the engineer would rather have well-constructed, easily administered, reliable and valid achievement and diagnostic tests at his disposal, instead of relying on measures of overall proficiency to do the same job. In connection with general curriculum, however, and in the measurement of language skills acquired outside the language class (Chapter 5), proficiency testing is often the *only* tool, because achievement goals are not specified in linguistic terms

and students are usually not available for aptitude and diagnostic testing except in connection with language curriculum. To complicate matters further, the language varieties or codes in which the linguistic skills are needed, or in which they are being acquired outside the language class, may not occur in the language curriculum at all.

Thus the language proficiency test is the most basic of all language tests, not only because it is never based on a school syllabus but also because it is the only type of test capable of measuring the most basic of all language distances, namely that between educated native speaker proficiency and language learner proficiency:

$$XPn - XPp \qquad \text{or} \qquad XPn - XPc$$

From this gap, which we have called proficiency distance, can be derived all the other formulas of distance relevant to language in schools. Proficiency tests, moreover, can be administered to language and general teachers as well as to students.

5) *Measures of communicative competence* (11.2.), although not very well developed or validated at this writing, are potential tools for the language engineer in dealing with cultural distances. As in the case of proficiency tests, such measures have applicability not only to the needs of general curricula but also to the needs of language curricula in which the tests, examinations, or specifications of aims include aspects of communicative competence or communication skills over and above the usual linguistic skills and language proficiency requirements. These additional skills may be specified for teaching not only as part of 'Language Arts' courses in monolingual education, but also quite frequently in second-language syllabuses of the situational, communicational, and functional/notional varieties. In the frame of reference presented here (up to Chapter 11), measures of communicative competence have been considered as auxiliary tools, on a par with measures of intelligence, creativity, cognitive and experiential development, socialization and acculturation. Until the instruments for measuring communicative competence have been refined to

the degree already attained by language tests, the problem of cultural distance, exemplified by the formula --

$$XPn + XCn - XPc - XFc$$

-- cannot be engineered with anything like the same degree of confidence with which problems involving purely linguistic gaps of students and teachers can be approached by the language engineer. Another reason for this, besides the relative validity of the measures, is that the kinds of *opportunities* for acquiring communicative competence cannot be recreated in the language classroom alone, and the support of other school and community contexts is nearly always needed to make such opportunities available to the learner.

6) *Surveys*, especially of motivation and attitudes toward language types (11.5.), finally, are useful tools for the language engineer (and the language planner) in the same way that language aptitude tests are. In addition to motivation and attitude surveys, whenever direct observation of language use in schools cannot be made, this kind of information can be collected in the same way. The instruments used in collecting all such data would include questionnaires, interviews, and other survey techniques directed at students, teachers, school administrators, and parents. The design of the actual instruments is more properly the province of sociologists, psychologists, and educationists than of the language engineer himself, whose role in surveying is primarily to identify the linguistic variables and parameters concerned. The information gathered from such surveys may have little bearing on the language syllabus itself, since the requirements of the syllabus are dictated by language and general curriculum decisions already taken, but the information can have a great deal of bearing on the design of *instructional sequences*, on the curriculum materials and teaching/learning strategies that support them, and even on the training of language teachers. In connection with the selection and training of language and general teachers, of course, language tests and measures of communicative competence can be used if the appropriate instruments exist and if the teachers are available for testing. If not, survey, questionnaire, and interview techniques can be employed to get similar information about teachers' language proficiency and

communicative competence, through self-assessment, peer assessment, or informal assessment.

12.5. The language program defined

Language curriculum is determined by the types of language tests and examinations which are used (along with other tests) to decide which students will pass, fail, or otherwise be meaningfully graded in the school context; which students will be held back and which promoted; which students will be awarded certificates, diplomas, or degrees and which will not; which students will qualify for further education in other schools, for further training in certain trades and professions, or for direct acceptance in certain kinds of employment (e.g. teaching). A particular language syllabus is only partly dictated by the requirements of language curriculum, however. It is also partly dictated, in the typical school, by the needs of students in general curriculum at the same stage of education or at subsequent stages, and by the resources available to the school -- particularly, teacher resources and curriculum materials resources (hardware and software). The form that language instruction actually takes has all these same constraints plus others -- namely, the language aptitudes, attitudes, and motivation of particular classes or groups of students within the school, and the individual teaching styles of particular teachers in the school.

The easiest way to clarify the relationships among language curriculum, syllabus, and instruction is to imagine the simplest possible linguistic situation that a school can have: a monolingual school, for example, in which all general curriculum is taught through the medium of a single, standard language, which is also the home language of all students in the school, and in which there are no longer subjects other than a required course of study in that same language. For such a school, the linguistic distances will all be very short ones, but the language engineering problems are essentially the same as for the most multilingual of schools. (An example of the other extreme in school linguistic situations will be presented in Section 12.7.)

In considering briefly the engineering problems in this most monolingual of schools, let us further assume that our school is a primary school, that the language in question is English, and that the school-leaving examinations are set by state rather than local authority. Let us suppose that the English examination for school leavers consists of three main components: 1) a discrete-item vocabulary test; 2) a grammar test, in which students must diagram sentences and name parts of speech; and 3) a 200-word essay on a general topic chosen from a finite range of topics. The examinations in mathematics, general science, history, geography, and moral education, let us suppose, consist mainly of objective questions: multiple choice, true-false, matching, etc. Let us imagine that the school is too poor to be able to afford a wide range of individualized curriculum materials, and must depend heavily on teachers and standard textbooks for all instructional sequences. Let us suppose, finally, that all of the teachers are general primary teachers; none have specialized in the required subjects of the school, including the English subject, but all are relatively proficient and communicatively competent in English.

What are the solutions to language engineering problems in such a school? The most obvious gap to be closed is literacy distance. Pupils entering the school, if it is a typical one, will come with varying degrees of familiarity with written English, although their spoken English may be roughly at the same level of proficiency. There may also be considerable differences in vocabulary range. The examinations in general curriculum, since the questions are objective ones, put a heavy premium on the ability to read English rapidly and accurately, and no emphasis on the ability to produce English words, sentences, and paragraphs. In one part of the language examination (part 3), the emphasis is quite the reverse, and there are additional requirements for grammatical analysis and general vocabulary expansion which are quite unrelated to general curriculum requirements. To the language engineer, the best solution to the English *syllabus* problem would be the following:

1) First emphasis: literacy for all students at the earliest possible grade level

2) Second emphasis: reading practice based on readers selected to improve general (i.e. non-technical) vocabulary, for example, children's story books
3) Third emphasis: writing practice, on topics like those required for the language examination, working gradually up to the 200-word essay
4) Fourth emphasis: grammatical analysis of English language texts, own written products, and the texts used in other subjects.

This syllabus sequence consciously caters initially to the pupils' needs in *general* curriculum, and only later to their needs in language curriculum. This is recommended not only by the logic of the learning sequence, but also by the consideration that it would be better for the slower students to do badly in the English examination than to fail five other subjects because of their inability to read. No instruction in the oral skills is provided for, because these skills are not examined in either language or general curriculum. (The oral skills, as well as general communicative competence, are likely to be improved in this school anyway, through socialization and through oral instruction in all the other subject areas.)

The design of the actual instructional sequences based on this syllabus will depend heavily on diagnostic testing and motivational considerations, as far as the students are concerned, and on preferred teaching and classroom management styles, as far as the teachers are concerned. All of the four areas of emphasis listed above can be individualized, and part of the last area can actually be programmed. If suitable materials for individualization are not available in the school, and if they cannot be produced by the teachers or by the language engineer, teachers of English will be well advised to resort to management techniques. For example, in a third grade English class, the teacher could be working directly with the slower pupils to close the literacy gap while the average pupils are doing silent reading and the faster pupils are beginning their writing practice. The very best readers and writers could be motivated by giving them assignments in creative writing, library reports, and other such projects which would then be added to the curriculum materials, and so forth. Or they might be directly enlisted in peer teaching activities.

If we move away from this example of 'first-language' teaching to consider 'second-language' teaching, we will see that exactly the same engineering principles apply. Suppose that our monolingual school just described were located in Singapore instead of in England or the United States, and that everything except the needs and resources remained the same. In this case, assuming that most of the pupils did not come from English-speaking homes, there would be larger initial channel and proficiency gaps to overcome, as well as different motivational and attitudinal sets to contend with before the English syllabus and the instructional sequences could be decided on. But the terminal output of the English program would still have to be the same as if all the pupils were native speakers of English (this being, in fact, the actual situation in some Singapore schools). In terms of resources, the Singapore school might have a wider range of curriculum materials and better hardware available to it than our first hypothetical school, but the teacher resources might be quite different -- for example, fewer teachers would be as proficient in English as their native-speaker counterparts. The result would almost certainly be a completely different type of English syllabus specification, even though the language and general curriculum requirements are identical. But the steps in language engineering for the two school English programs remain the same.

In Chapter 10 and 11 we have seen that the models available for language instruction correspond exactly to models available for syllabus design and for language achievement testing (and hence, for language curriculum itself). Yet the variables introduced by general curriculum requirements, learners' needs and motivation, school resources, and individual teacher capabilities mean that this apparent congruity of language curriculum, syllabus, and instruction does not often hold in real school situations, even monolingual ones. When we come to bilingual education, of course, the engineering problems are apt to be much greater, but the essential relationships among the three components of the language program remain basically the same.

A very common example occurs in sequential bilingual education, whereby a notional/functional syllabus seems the most suitable model for preparing students for a shift in the medium of instruction (as in the typical case for English for Special Purposes -- see 10.8.). But this model often cannot be implemented because of the lack of ready-made language curriculum materials. A similar situation arises when the best method of instruction in a foreign language is obviously a situational or communicational approach (10.4-10.5), but the available teachers are not sufficiently proficient or communicatively competent to handle this model of language instruction, so that a shift to translation and explanation becomes the only viable alternative.

To summarize, the first step in language engineering is needs and resources assessment, the second is designing the syllabus (as in the illustrations above), and the third step is to recommend to teachers various kinds of instructional approaches, classroom management techniques, materials combinations and sequences which will be most likely to meet the aims of the syllabus. We might call the total result of the various engineering decisions taken at these three stages or levels *the language program* for the school concerned. The development of the program can then be diagrammed as follows:

1.Curriculum level	a)	Needs assessment, in terms of the distances between *average* current student proficiency/achievement levels and the targets of general and language curriculum
	b)	Resources assessment, in terms of *average* teacher capabilities (language proficiency and general training) and available curriculum materials (hardware and software)
2. Syllabus level	a)	Design of a language syllabus that meets needs as well as possible within the constraints of the curriculum resources
	b)	Revision of intermediate achievement tests (where possible) reflect the sequence of the syllabus; diagnostic tests

3. Instruction level	a) Specification of a range of instructional options which take into consideration characteristics of *individual* teachers and *individual* classes in the school b) In-service training or orientation of teachers (where possible) during which both the philosophy of the syllabus and the instructional options are explained.

The *language program*, as far as the students are concerned, may be only that part of the third level (the instruction in their own class) to which they are exposed. For the language teachers, it is the second and third levels at least, and for the language engineer, it is all three. In the next two sections of this chapter we will see that the above model, which applies to the engineering of a *single* language program, also applies to the engineering of programs in which two or more different language programs in the same school can be made to support each other, either sequentially or simultaneously.

12.6. Applications of linguistic analysis

In the first stage of language engineering, once the study skills have been artificially separated from the language skills, the various linguistic distances between class behavior and desired terminal behavior are ready to be identified. When this has been done, a syllabus can be designed, in the second stage, which then becomes a blueprint for providing students and classes with opportunities for reducing the distances that have been identified, in the third stage. In all three stages, the language engineer makes use of the various tools of applied linguistics (described in 12.4.). Except for surveys, questionnaires, and interviews, which tend to be based on more general methodologies, all these tools of the applied linguist are ultimately derived from principles of linguistic analysis. Four distinct categories of linguistic analysis have been discussed in various chapters of this book: 1) descriptions of whole languages and dialects; 2) text analysis; 3) error analysis; and 4) contrastive analysis. It will be useful to summarize these four main categories of *descriptive* linguistic analysis in one place, in order to emphasize their relationship to each other in the context of language engineering. Later (Section 12.8.), we will separately consider applications of *prescriptive* grammar and lexicography to the broader field of language planning.

1) *Description of whole language varieties* (3.3.), and especially of the standardized language varieties which occur as media of instruction in schools and as language subjects, is most useful in *proficiency testing*. In fact, no other kind of linguistic analysis can be used for this purpose, because every measurement of proficiency distance requires a description of educated native speaker competence and/or performance (XPn) as a terminal point or criterion against which the learner's version of the language variety (XPp) can be measured. The same description of a language or dialect will also provide baseline data for text analysis, error analysis, and contrastive analysis. In connection with contrastive analysis especially, it is desirable to have complete descriptions not only of school language varieties, but also of other languages and dialects occurring in the school context -- for example, the source languages or 'mother tongues' of large groups of students in a school, school system, or community. The measurement of language variety distance presupposes descriptive as well as comparative/historical treatments of the language varieties concerned, just as the measurement of all the other distances presupposes linguistic as well as psycholinguistic and sociolinguistic accounts of the language variety concerned.

2) *Text analysis* (7.7.) is the basic tool of the language engineer in measuring *channel distance* and in analyzing or specifying the content of language *achievement tests*. Text analysis is essentially the linguistic analysis of actual texts that occur in language and general curriculum, and which therefore must be interpreted, produced, or participated in by students. These texts may be produced by single speakers and writers (narratives, expositions, arguments), or by groups of speakers and authors interacting with each other (conversations, debates, plays) through various channels; they may be entirely in standard, formal versions of the language concerned, or they may be in various registers, lects, and codes.

The analysis of texts occurring in *general* curriculum provides the language engineer with a clear indication of what should be included in the corresponding language syllabus over and above the specifications of the language curriculum itself. Analysis of the kinds of texts which must be produced or interpreted by students in taking the achievement tests prescribed by *language* curriculum helps to fix the terminal objectives of the language syllabus and the intermediate objectives of each instructional sequence relevant to that part of language curriculum. (When the language engineer himself is in a position to develop the achievement tests, of course, he can use text analysis to bring language curriculum, syllabus, and instruction firmly into line.)

Lexical and syntactic frequency counts are common products of text analysis, and as such are useful in compiling reference materials for teachers and students as well as in designing syllabuses. But another aspect of text analysis, and one which takes it further away from the measurement of strictly linguistic distances, is that is usually entails discourse analysis and the identification of different styles and registers of speaking and writing. Since the detailed analysis of actual school texts, and especially of oral texts, also involves the treatment of kinesic and pragmatic features (see Section 11.2.), text analysis is also potentially useful for including what we have called *cultural distance* factors in the measurement of channel distance. In other words, text analysis provides the means for specifying *all* the terminal points for the school linguistic distances (XWt, XSt, XT, etc.) and the corresponding cultural distances (XWt + XCt, XSt + XCt, XT + XC, etc.), but it does not provide the means for specifying the terminal points of language variety distance or the proficiency and cultural distances themselves.

3) *Error analysis* (8.7.), along with *diagnostic testing*, enables the language engineer to identify the other terminal point in any formula of linguistic distance -- i.e. to specify the nature of the learner's version of a particular language variety (or of any given text in that variety) at a particular time (XPp or XTp), and potentially also to isolate the cultural factors in the learner's version (XPp + XFp or XTp + XFp). The linguistic analysis of errors in production or comprehension provides a basis for the application of the results in two

directions: a) toward identifying the probable effect of the error on the consumer (who in the case of comprehension errors is the learner himself); b) toward identifying the probable ultimate cause of the error, which may or may not have been predictable in terms of contrastive analysis. In terms of effects, errors can be harmless, confusing, or actually misleading. In terms of causes, errors can be traced to sources within the target language itself (e.g. the kinds of errors made by children learning their first language), to sources within some other language previously learned (as revealed by contrastive analysis), or to non-linguistic sources such as communication strategy or cultural distance.

The techniques of eliciting texts for error analysis purposes are essentially the same techniques as are employed in eliciting or recording samples for complete linguistic descriptions and for text analysis. The only difference is that sample texts for error analysis are seldom elicited from language users who are thought to be already competent in the language variety concerned (except in certain kinds of historical research in which the possible causes of language change are being explored). Although it is possible to conduct error analysis on texts produced or interpreted by individual language learners, this kind of analysis is much more useful in constructing and evaluating language learning models and in psycholinguistic theory-building than it is in language engineering. As far as the use of language in schools is concerned, the error analyst usually deals with whole groups, classes, or categories of students rather than with individual students. The results of class error analysis can be applied not only to syllabus design, but also to the prevention and treatment of errors through instructional strategies. Thus the language engineer is primarily interested in determining the values of the negative terms in the following kind of formula, in which the value of the positive term can be established through text analysis:

$$XT - XTc$$

4) *Contrastive analysis* (11.7.), finally, is the primary tool of the language engineer in measuring and dealing with what we have called *language variety distance-* -- the inherent distance between any two standard language varieties which occur as

media of instruction, components of language curriculum, lingua francas, or home languages of the school population. Since contrastive analysis always involves the comparison of what are perceived as two different language varieties, with the emphasis on identifying differences rather than similarities, it presupposes that complete linguistic descriptions of the varieties are already available.

The more obvious uses of contrastive analysis are the following:

a) in connection with error analysis, to predict, treat, or prevent specific areas of difficulty in language learning (as noted in the previous section);
b) to help develop teaching methodologies, syllabus specifications, and curriculum materials which stress either grammatical explanation or translation or both as a language learning strategy;
c) to provide inputs for reference materials, such as pronunciation manuals, pedagogical grammars, dictionaries, and contrastive word-lists for second-language learners of a given first-language background;
d) to provide inputs for translating and interpreting between the two language varieties that have been contrastively analyzed, and especially in the design of machine translation systems.

Among the less obvious, but perhaps equally important, uses of contrastive analysis are these:

e) to facilitate the coordination of two different language syllabuses designed for the same school or school system (see 11.7.);
f) to provide inputs into the theory of translation itself;
g) to guide the construction of language tests in which more than one language medium occurs in the stimuli and/or responses (see 9.2.);
h) to assist in the development of language *aptitude tests* to be administered to speakers of a given language variety (the contrast here being between the grammar of that language and certain aspects of universal grammar).

Thus we see that contrastive analysis is far more useful in language engineering than some of its modern detractors seem to realize (concentrating their criticism as they have only on the first use of contrastive analysis listed above). In any school or school system in which two or more language varieties are relevant to the curriculum, this tool may in fact be the most important one in the arsenal of the language engineer. This position can be justified, moreover, without even considering the additional uses of contrastive analysis in language planning, as opposed to engineering (see the next two sections).

12.7. The multilingual, multichanneled curriculum

In bilingual schools, at least two media of instruction are used in general curriculum, both of which may also recur as language subjects, and often still other language types are taught in the same school as required or elective subjects. In monolingual schools, language curriculum often includes language types other than the main one used as medium of instruction. In all schools, numerous distinct oral and written channels are employed by teachers and are found in the instructional materials of both language and general curriculum, and in the tests and examinations which define those curricula. In many schools, both monolingual and bilingual, the language varieties themselves, as used by different teachers and as represented in various kinds of instructional materials, may differ from the standard or prescribed school language variety stipulated by educational policy for the uses concerned. In this last sense, the typical school's curriculum is not only a multichanneled one but also a multilingual one. In schools where the student population itself comes from more than one kind of linguistic background, this multilingualism of the school is of course further complicated.

What are some of the conclusions to be drawn from this state of affairs? As far as the language engineer is concerned, the multichanneled and multilingual nature of the school or the school system is a fact of life. His principal engineering task is to reduce distances, as fast as possible, for the greatest number of students possible. For this purpose, the sequence of his implementation activities has been well defined, in terms of the total *language program* (12.5.). He begins with an assessment of student needs and school resources. Using this information he designs or adapts a language syllabus, for each language variety concerned, which will hopefully meet the sequential needs of both language and general curriculum at each stage of education and is yet realistic in terms of school resources. But these language syllabuses are only blueprints for instructional sequences, not the sequences themselves.

In creating opportunities for students to close channel distances, active/passive and literacy distances, proficiency and cultural distances, the language engineer must also allow flexibility for different approaches, strategies, methodologies, and (if possible) curriculum materials to be used in pursuing the general aims and specific objectives of each stage of the syllabus. This is necessary because groups of students within the school will differ in terms of general language aptitude, motivation, and attitudes toward the school language varieties, and because individual teachers will differ in terms of language proficiency, communicative competence, cultural familiarity and attitudes with respect to certain language types, and preferred individual styles of teaching and classroom management. Recommended approaches, methodologies, and materials must be flexible enough to accommodate these individual and group differences, while at the same time not being so eclectic as to preclude, on theoretical or practical grounds, the attainment of the desired objectives.

When it is possible for the language engineer to personally conduct in-service training or orientation programs for language teachers, one main purpose of such training will be to help the teachers to see the rationale behind the syllabus -- to accept its aims and objectives as being specific enough for the teaching task at hand, attainable for most of the students concerned, and justifiable in terms of *both* language examination requirements and the needs of general curriculum. A second main purpose will be to explain (and, where feasible, to demonstrate), what approaches, techniques, available curriculum materials, and classroom management models might be most appropriate to these aims and objectives, so that teachers can then *select* from this range of possibilities whatever best suits their own styles of teaching and their own students. But the language engineer does not do this selection for them. (Misunderstandings about this last point, more than anything else, have cast grave doubts on the role of applied linguistics in language teaching and learning.)

Finally, as mentioned previously (12.5.), there is yet another dimension of the language program in which the inputs of the language engineer can be useful, and there are aspects of general curriculum which he can affect. If the language engineer is in a position to influence the development of two or more language syllabuses at the same time, or the development of general curriculum materials, he has still other functions to perform in the school system. In the first case, he can use contrastive analysis to decide which of the linguistic and communicative skills are most likely to be *transferable* from one language variety to another and which are not (in general, the greater the variety distance the less likely the transfer), and to plan the syllabus sequences accordingly. In the second case he can use text analysis of the content of the *language* syllabus and curriculum materials to work out guidelines for *general* curriculum developers and textbook writers in other subjects at the same, or subsequent, educational levels.

A third opportunity for language engineering arises whenever the applied linguist is in a position to influence the external language examinations which define the language curricula for a particular school, or to participate directly in the preparation of language tests or other assessment instruments within the school system. This function, however, borders on language planning in the wider sense, and is better considered in the last section of this book.

In all of the activities which basically have to do with implementation, the language engineer will need one or more of the tools of testing, surveying, and linguistic analysis described previously. But if the precise tools for the engineering task at hand have not yet been devised, the engineer also becomes a researcher. He may also have to function as an experimenter and an evaluator, in the general educational meanings of these terms. In these other functions as in the role of examiner, the work of the language engineer necessarily overlaps with that of the language planner.

12.8 Language planning for the school system

Language planning is a vast field. It embraces not only educational planning but also planning for socioeconomic development in many fields -- for example, in public health and family planning, mass communications, agriculture and ecology, commerce and industry, the courts, military and civil administration, public libraries and community centers. Language planning cannot be adequately treated as a whole in this short final section, but the subject does have considerable bearing on educational planning, even in basically monolingual countries. The intersection of the two forms of planning can best be appreciated in terms of the use of language in schools, and particularly in terms of media choice and language subject requirements and options. In order to draw some conclusions about the past and potential effects of language planning on education, it will be useful to distinguish four main categories of language planning, as follows:

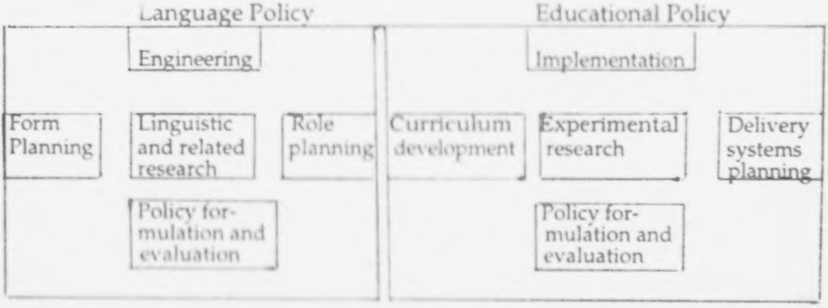
1) Language engineering
2) Language standardization, development, and cultivation
3) Language role planning
4) Language policy formulation.

Language engineering, as we have defined it in the last two chapters, has to do with the implementation of policy (both language and educational policy, in the case of schools), and takes for granted both the *form* and the *role* of each language variety involved in a given society or school system. The second category of language planning activities takes the role of the language as given (or prescribed), and attempts to change the *form* of the language in some way. This is done through *standardization* (of the prescriptive kind -- but see also Section 2.8.), by reducing the variation that exists; through *development*, by adding new terminology, word-building devices, or even new syntactic and discourse devices to the existing language inventories; and through *cultivation*, by fostering increased output (and demand for) literature in domains formerly occupied by other languages or never really cultivated by the society in any language, and by so doing presumably increasing the richness of the language itself. The third category, language role planning, takes the form of the language as given (or planned) and attempts to change the *role* of the language in the society, including of course its role in education. Language policy formulation, finally, has to do with *both* the role and the form of each language variety which is important to the society.

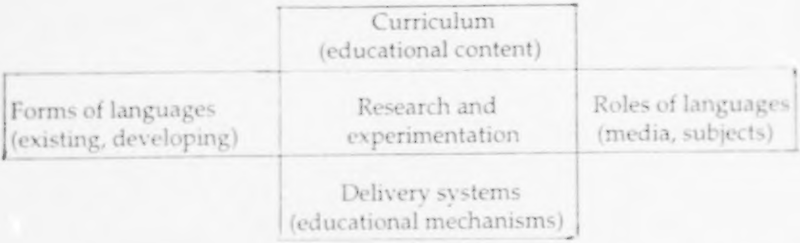
Changes in language forms and roles within a nation or society, whether planned or not, tend to be interdependent. For example, any change proposed for the national language of Country X is likely to affect the roles of foreign, official, and provincial languages of Country X as well, and it may also affect the forms of those languages as used in various social and geographical sectors of the country. The change is certain to affect language engineering problems in many ways. Thus language policy formulation is the most basic aspect of all language planning, and forms its keystone.

The language planner who operates in the field of education, consequently, has many potential functions besides those already enumerated for the language engineer. If changes are desired in the form of any language relevant to schools, the language planner can use research tools such as opinion surveys, other forms of data collection, and experimental techniques; he can evaluate the experience of language standardization, development, and cultivation projects in societies similar to his own, performing this evaluation in an informed and sophisticated way; and he can apply the principles of prescriptive grammar, if need be, in an equally informed and sophisticated way. In regard to language role planning, if options are still open for the choice of media of instruction in schools and for required or optional language subjects (the options that were discussed in Chapter 4), he can provide vital inputs into the decision-making process, using the tools of the applied linguist, the sociolinguist, and the psycholinguist, and thus participate in language role planning for the school system. If he is allowed to participate also in the setting of internal and external language examinations for the school system as a whole, or to participate in any other such evaluation exercise, he can influence language curriculum itself. In this last capacity he will be in a much better position to solve the main problem of language engineering: How to make the language program best serve the needs of general curriculum, given the resources of the school system and its school population. More than that, once the language curriculum has been brought into line with the needs of students, the language engineer can participate in the development of new instructional materials, and suggest changes in the design of *pre-service* training for language teachers, instead of confining his inputs to in-service training.

Whenever the language *planner* is able to function in any one of these non-engineering capacities, and is no longer concerned merely with implementation problems, he becomes by virtue of that fact a participant in language *policy formulation* for the schools. This point can best be conceptualized by viewing the four branches of language planning in an equal, rather than hierarchical, array, and by juxtaposing this array to a typical model of the overall educational policy planning process, as follows:


Language Policy
Educational Policy
Engineering
Implementation
Form Planning
Linguistic and related research
Role planning
Curriculum development
Experimental research
Delivery systems planning
Policy formulation and evaluation
Policy formulation and evaluation

The fit implied by the vertical axes of these two juxtaposed models is obviously a good one. The horizontal match-ups, however -- those among the planning components -- are apparently not in the same dimension; both language form and role planning, for example, are involved in curriculum development, and equally affect the teacher training aspects of delivery systems planning. This observation suggests a third model, as follows:


Curriculum
(educational content)
Forms of languages
(existing, developing)
Research and
experimentation
Roles of languages
(media, subjects)
Delivery systems
(educational mechanisms)

The absence of arrows (indicating flow direction) in all of these models is significant. It means that the various components are in constant, organic relation with their immediate neighbors, with flow in all directions. Successful language planning for school systems must be done in accordance with models like these. And because languages, societies, and educational systems are constantly changing, the central core of research and experimentation can never be dispensed with. Even the best curricula and delivery systems have a life expectancy of ten years at the most, and we have only to look at the newspapers to appreciate how the forms and roles of language can undergo drastic change within a generation.

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